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MASSACHUSETTS
HIGHWAY COMMISSION

YEAR ENDING NOVEMBER 30

1909

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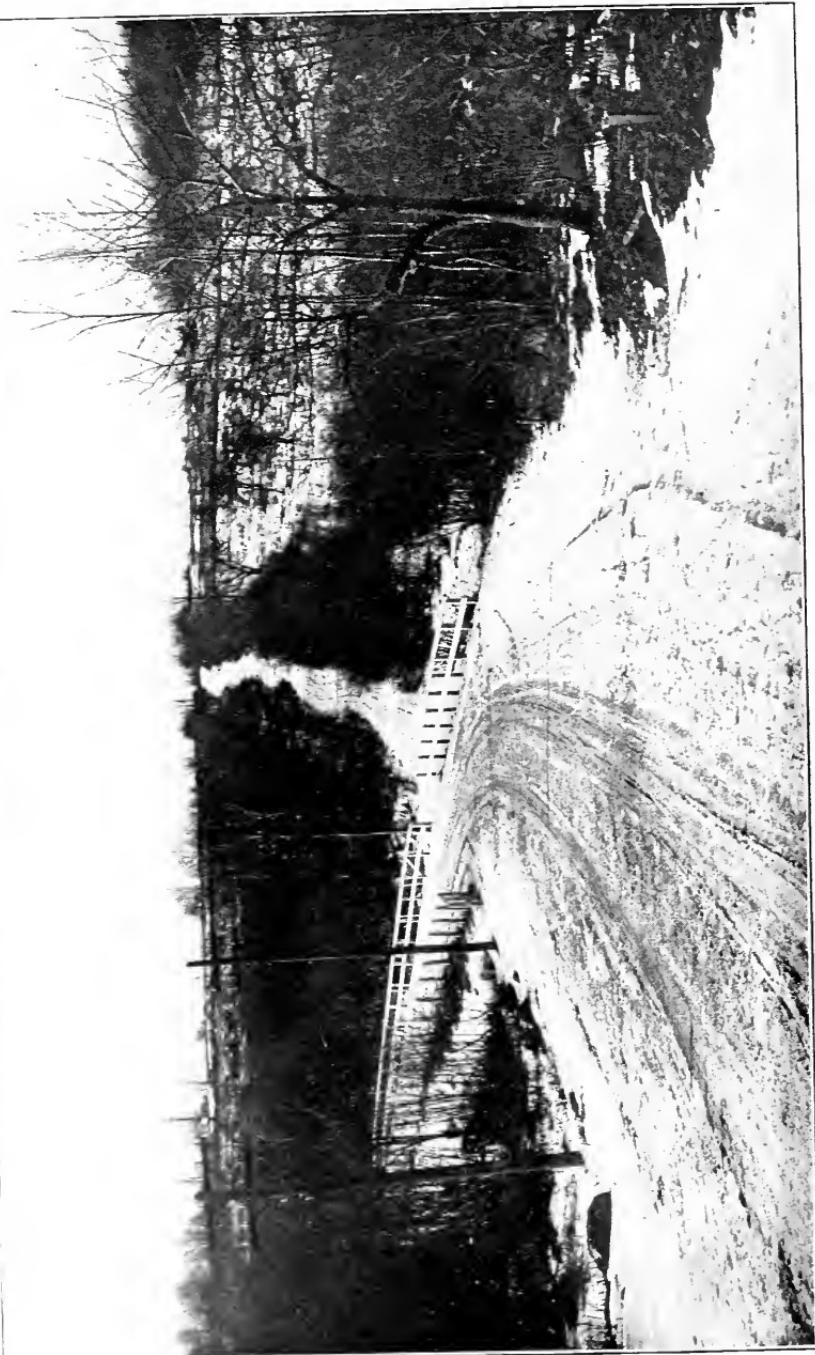
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"JACOB'S LADDER."



OVERCOMING THE GRADE—STATE HIGHWAY AVOIDING MOREY HILL, BECKET

Maximum Grades : Old Road, 19 Per Cent.; New Road, 6.45 Per Cent.

SEVENTEENTH ANNUAL REPORT
OF THE
MASSACHUSETTS
HIGHWAY COMMISSION,

FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1909.

PART I.—STATE HIGHWAYS AND MOTOR VEHICLES.

PART II.—SUPERVISION OF TELEPHONE AND TELEGRAPH
COMPANIES.

JANUARY, 1910.



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CHAPEL.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

The Commonwealth of Massachusetts.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled.

The undersigned commissioners, appointed under the provisions of chapter 476 of the Acts of 1893 and of chapter 474 of the Acts of 1900, herewith submit, in Part I., their seventeenth annual report, in accordance with the provisions of chapter 47 of the Revised Laws, and, in Part II., their fourth annual report relative to their supervision of telegraph and telephone companies, under the provisions of chapter 433 of the Acts of 1906; both reports being for the fiscal year ending Nov. 30, 1909.

HAROLD PARKER.
WM. D. SOHIER.
F. D. KEMP.

BOSTON, MASS., Jan. 4, 1910.

PART I.

ANNUAL REPORT OF THE MASSACHUSETTS HIGHWAY COMMISSION.

During the year ending Nov. 30, 1909, the commission laid out 36.53 miles of State roads. Of these, 30.03 miles have been completed and 6.50 miles are in process of construction. The total length of State highways at the end of the fiscal year, Nov. 30, 1909, was 784.63 miles.

Various cities, towns and individuals throughout the Commonwealth have contributed toward the building of State highways. In some cases the towns have built the highways, which have afterward been taken over by the State.

The total amount expended by the commission for the construction of State highways, including the planting of trees, etc., is \$7,157,945.96.

The number of petitions for such roads received annually grows less each year, because the main lines of thoroughfare have already been petitioned for, 826 petitions being on file, covering a total of 2,003.16 miles of road.

The sum of \$50,215.12 has been spent in so-called "small towns" for the improvement of town roads. The expenditure of this money, together with such amounts as have been contributed by the towns themselves, has resulted in the improvement of about 30 miles of town ways. These roads remain under the control of the municipalities.

The roads thus improved under the direction of the commission, and largely out of the funds of the Commonwealth,

aggregate 193.57 miles; the total amount expended (including engineering charges) being \$336,917.92.

It appears to the commission that the State highway system, indicated by the roads already built and petitioned for, has, in the main, met with public approval.

The road which has been built to avoid the hitherto almost impassable Jacob's Ladder in the town of Becket has been completed, at an expenditure within the appropriation, and, including the work done under the appropriation of 1909 in the improvement of the road between Morey Hill and East Lee, a very serviceable highway now exists all the way from Pittsfield to Chester. There still remain a few miles of road between Chester and Huntington to be improved, and then the east and west route between New York State and Boston will be in excellent condition.

Much work has been done on the road from Boston to the New Hampshire line, via Newburyport. During the past year the sections between Lynn and Salem, in Hamilton, Ipswich and Rowley, have been under construction. The sections in Hamilton, the northern part of Ipswich, the southern part of Rowley, and from Salisbury north to the New Hampshire line still remain in poor condition.

On Cape Cod in the town of Eastham there are 3 miles of road in process of construction by the sand and oil method, 2 miles of which are actually under contract. It is believed that this kind of construction will give a practical and useful road to the permanent residents of the Cape, and that the route to Provincetown will soon be one of the most pleasing tours in Massachusetts for automobiles.

A section of State road between Fitchburg and Greenfield has been completed in Erving and Montague.

The New Hampshire State road from Nashua has been united with the Massachusetts system along the Merrimac River in Tyngsborough.

The Springfield and Worcester road will be nearly completed when the bridge over the Quaboag River in Palmer, now under construction, is finished.

Some progress has been made during the year on the north-

and-south road along the Connecticut River, but many miles of inferior road still exist on this line.

The roads leading south from Boston have been improved by gradually filling in the uncompleted sections which are necessary to develop the system.

The "small town" work has progressed in a manner satisfactory to the commission. The \$25,000 allotment, made under authority of the Legislature of 1908 for small towns of less than \$1,000,000 valuation which contribute toward the cost of the improvements, has been practically exhausted. Many towns have appropriated an amount equal to the sum allotted by the commission. There appears to be no question as to the utility of this method of improving town roads. It seems to have met with public approval, especially in those towns which are remote from the main lines of traffic.

CHARACTER OF CONSTRUCTION.

The constantly increasing use of automobiles has confirmed the commission in the views that it has expressed in former reports, viz., the necessity for the adoption of a binder which will prevent the disintegration of the roads by the rubber tires of the swiftly moving motor vehicles. With this in view, the commission has continued the experiments which were begun last year, but on a very much larger scale. During the past year the commission constructed about 20 miles of plain macadam road and about $4\frac{1}{2}$ miles of macadam with an oil and sand coating; $1\frac{1}{4}$ miles of road were grouted with a tar product, and on $2\frac{3}{4}$ miles the upper course of stone was coated with tar.

The commission also built about $2\frac{3}{4}$ miles of ordinary gravel road, and let contracts for between 6 and 7 miles of road to be constructed of a mixture of asphaltic oil and sand from 3 to 4 inches in thickness. These roads are now in process of construction, one of them being practically completed.

BRIDGES AND CULVERTS.

In the construction of bridges and culverts the commission has used reinforced concrete, as has been its custom for

many years, both on account of the economy of construction and because of its durability.

Chapter 531 of the Acts of the year 1906 directed the commission to report to the Legislature when public safety and convenience required the reconstruction of the bridge across the Parker River in the town of Newbury, and on Feb. 23, 1909, the commission, in a report to the Legislature, recommended that a new bridge be constructed during the year 1909. The design of this bridge contemplated the erection of three concrete arches, one of a span of 110 feet and two of spans of 95 feet each. The waterway was also increased by this plan.

The Legislature of 1909 appropriated \$20,000 for the repair of the old bridge over Parker River in the town of Newbury, and for a study of the bridge question in general. Under the provisions of this resolve the commission, with the advice of Messrs. J. R. Worcester & Co., consulting engineers, determined upon the best way to repair the present bridge. The method adopted was to strengthen the old piers and abutments, top out the old walls with concrete so as to bring the roadway and walls to a uniform grade, and replace the old wooden trusses with steel pony trusses.

The work was advertised and let to the lowest bidder, the New England Contracting Company of Worcester, in September, 1909, and the repairs have been in progress since that time. The bridge will probably be finished during the winter, with the exception of one of the piers, which it has been found necessary to reconstruct. This will be done early in the spring.

The bridge next in importance is the bridge across the Quaboag River in the town of Palmer, which consists of three arch spans of granite, one of $49\frac{1}{2}$ feet and two of 20 feet each. This bridge was advertised under two specifications, one for steel concrete and the other for granite masonry. The W. N. Flynt Granite Company of Monson was the lowest bidder under both specifications, and the difference in its bids on the two methods of construction was so small that the commission determined to use the granite in preference to the concrete.

The following is a list of other bridges built by the commission during the year:—

- In Southampton, across the Manhan River, concrete beams, 2 spans, 25 feet each.
- In Athol, over West Brook, concrete beam, 1 span, 19 feet.
- In Salem, over Forest River, concrete slab, 1 span, 10 feet.
- In Templeton, over Brigham Brook, concrete slab, 1 span, 8 feet.
- In Orange, over Massachusetts Brook, concrete beam, 1 span, 16 feet.
- In Becket, two concrete beam bridges, each of 1 span of 15 feet, and concrete slab, 1 span, 10 feet.
- In Agawam, over Tarkhill Brook, concrete slab, 1 span, 10 feet.
- In Sunderland, over Dry Brook, concrete slab, 1 span, 9 feet.
- In Sturbridge, over Hobbs Brook, concrete arch, 1 span, 11 feet, extension.

MAINTENANCE.

The Legislature appropriated for maintenance purposes \$240,000 and for the improvement of the West Becket-East Lee road \$10,000. All of the \$240,000 has been expended, and, in addition, \$154,131.01 from the motor vehicle fees fund.

The estimates of the engineers, showing the money necessary to put all of the existing State roads into good condition in the year 1909, as stated in last year's report, amounted to \$684,800. Of the amount available for maintenance, \$81,730.48 has been used in the ordinary repair of State roads, which means the cleaning of gutters, the removal of weeds, the smoothing up of the road surface generally, and sanding the roadway, without resurfacing. It will be seen, therefore, that the amount of money spent by the commission this year has not nearly met the requirements for resurfacing, as reported upon by the engineers a year ago. It is, however, fair to say that, with the money spent as is detailed in this report, considerable progress has been made in restoring the roads to better condition. During the year the commission resurfaced about 42 miles of State highway, and put a surface coating of a bituminous binder and sand or screenings on about 115 miles, — a total of nearly 157 miles.

Various methods were employed in the resurfacing. About 23 miles were resurfaced with stone only. On 14 miles the upper course was grouted with a tar product, 8 miles of which had a bituminous surface coating. This surface coating was made of refined tar, tar mixed with asphalt, asphaltic oil or re-

sodium asphalt, all covered with sand and rolled. On about $4\frac{1}{2}$ miles the stones in the upper course were coated with a bituminous material before being spread upon the road. The road was then rolled, and a surface coating was applied. The materials used were refined tar, genasco and refined tar mixed with 15 per cent. of asphalt.

In Andover about 3,000 feet and in Essex 1,464 feet were resurfaced or repaired in short experimental sections, and a great variety of materials was used.

In Wayland over 2,200 feet were resurfaced with gravel mixed with asphaltic oil, or such oil enriched with asphalt in various proportions.

Of the 115 miles treated with a bituminous surface coating, nearly 104 miles were coated with asphaltic oil and over 11 miles with refined tar. In both cases the bituminous binder was covered with sharp sand or stone screening. In many cases the road so treated really needed resurfacing, and it was carefully patched with the oil or tar and sand, and in some instances broken stone was added, and afterwards the whole surface was coated. If roads so treated wear well, it may do away with the necessity for resurfacing with broken stone.

The use of sand as a protection to macadam roads has been continued wherever a bituminous surface has not been considered necessary because of excessive automobile traffic. It is undoubtedly true, and it has been still further demonstrated by this year's experience, that on an ordinary country road, where the automobile travel is not heavy, a stone road can be preserved in good condition for many years by this means, at an average cost of perhaps from $1\frac{1}{2}$ to $2\frac{1}{2}$ cents per square yard per year. This would amount to from \$140 to \$220 per mile; but whenever the automobile traffic is heavy, it is undoubtedly true that sand alone will not preserve the road.

The commission has named, in its estimate to the Auditor of the appropriations required during 1910 for the maintenance of State highways, \$250,000 in addition to the amount available from automobile fees. It has estimated that under the new automobile law a sum in excess of \$200,000 will be realized from this source, which, added to the appropriation asked

for, would put into the hands of the commission something like \$450,000 for repairs and resurfacing during the coming year.

While this sum of money will not be sufficient to put all of the State highways into perfect condition, the commission feels that it is wiser at the present time to be conservative in the use of the new method of construction and surfacing. It hopes, with the money available, to keep the existing roads in reasonable repair and without serious damage, and to gradually get them all back into better condition.

It must be realized that, even without the automobile, the roads of the State are constantly wearing out, and require resurfacing and repair, and that, as has been frequently stated in the past, the cost of repair increases in a very rapid ratio if a road is neglected.

BITUMINOUS WORK.

Uncertainty as to what methods and materials are best for obtaining roads that will withstand modern traffic has caused the commission to continue the construction of experimental sections of road, the object of these experiments being to find what treatment is the most economical, considering the cost of construction and maintenance combined, not separately.

Records are made of the minutest details of each method tried, and close observation of the results obtained will enable the commission in the near future to determine what methods or treatments can be most wisely adopted. Every bituminous binder used has been analyzed, over six hundred analyses having been made during the year.

The satisfactory results obtained by giving the roads a light surface coating of refined tar or heavy asphaltic oil has led to extensive use of this treatment; and for the more economical and effective application of the material the commission purchased in England two machines for spraying the bituminous material under pressure, by the use of which machines a very thin coating of oil or tar can be spread uniformly, using one quarter gallon or less to the square yard.

A general conclusion has been reached by the commission as a result of work done up to this time, namely, that in many instances some bituminous binder must be used in the first con-

struction of a road, and that no positive determination of the exact nature of the binder that will be the most economical in construction and maintenance can be made until more time has elapsed to demonstrate their qualities by actual use on the roads. Meantime, until such determination can be made, the commission considers it advisable to use in general only the commonly used and comparatively inexpensive surface treatment of bituminous binder, using about one-half gallon to the square yard of surface, and covering with stone screenings, fine gravel or coarse sand. This treatment preserves the road, renders resurfacing less urgent, and lays the dust. The general use of oil or other dust layer instead of water has largely increased during the year, possibly because of the law adopted last winter, as recommended by the commission, allowing cities and towns to assess upon the abutters or take from the tax levy the whole or a part of the cost of using these dust layers instead of water.

There are a few principles which the experience of the commission leads it to believe will become universal in future bituminous work. Bituminous surfaces should have less crown than the ordinary macadam road. While the customary crown on macadam roads is $\frac{3}{4}$ inch to the foot, a crown of $\frac{3}{8}$ inch or less has been found to be probably sufficient and possibly more desirable than a greater crown on bituminous surfaces. Experience has also shown that with both automobile and horse traffic on a bituminous road it is advantageous, particularly with roads made by mixing or grouting tar in the top course, to apply a surface sealing coat, preferably of asphalt, as that seems somewhat less slippery, gives a better appearance, and, at the present writing, shows indications of longer life than a surface coating of tar.

An oil or tar, to be useful on a road, must bind the materials together; it must be tenacious and adhesive,—a binder, not a lubricant. One can tell almost as soon as one begins to use a material whether it works well or not; at any rate, at the end of one or two days, when it has had time to set.

It seems evident that the failure of some of the materials to give satisfaction may be due to superheating, which causes them to lose their adhesive properties; or a material may be mixed or

STATE HIGHWAY, WAREHAM.



FOREGROUND : Sand and Asphalt Oil "A." NEXT SECTION : Same, enriched with Asphalt.

thinned or fluxed with a material which is of no value as a road binder, thus taking away the natural adhesiveness of the asphalt or tar that is fluxed with it.

The commission cannot, at this time, announce any specifications which it would feel satisfied to recommend for general adoption.

The commission, however, has had Mr. H. W. Clark, the chief chemist for the State Board of Health, at work all this season making analyses and experiments, which have proved to be of great value, and it hopes before long to adopt specifications which will insure the securing of good road material. Mr. Clark's report will be found in the appendix.

Oil and Sand Roads.

On a good many miles of road the commission has not only applied a surface coating of oil covered with sand or stone dust, but, where the road has been in need of resurfacing, it has patched the ruts or holes with the oil and sand before giving it a surface coating. In some instances, where the road was in a very bad order, it has been given two coats of oil and sand over the entire width, and in other cases two coats have been applied to the middle of the road and one for the entire width.

Roads treated in this manner have proved satisfactory, and at the present time it looks as if this use of oil and sand, if continued and repeated from time to time as necessary, might do away with the necessity of resurfacing such roads with broken stone.

A new road built entirely of asphaltic oil and sand, heated, and mixed by hand, has been built by the commission this year.

The commission has also built some road on the Cape, at Wareham and Rochester, where the same method has been employed, using sand instead of gravel. This road looks reasonably satisfactory, and if it wears well this method of treatment will prove of great benefit to the sandy sections of the State where the travel is not extremely heavy, as it is entirely probable that such a road can be built for one-third of the cost of macadam, or less.

It is expensive, of course, to heat the sand and oil and mix them by hand, but no doubt the cost of mixing can be largely diminished by the use of some mechanical mixer. Some concrete mixers have been used, with good results, on work of this character. The commission hopes, however, to be able, within a short time, to build sand and oil roads by a cheaper method, either building up in layers, or spreading the oil upon the sand in various coats, and cultivating, shaping and rolling it into shape. A road built in Eastham in this manner, which has been repaired from time to time, has now lasted five years, and, while not, of course, as good as a macadam road, it is reasonably satisfactory, and accommodates the travel in the place where it is located.

A sand and oil road, which was built by this same method in Brewster, Harwich and Orleans last year, is now in fairly satisfactory condition. It ruts somewhat, but every time it is shaped and patched it gets into better condition, and is, at any rate, a decided improvement over the sand road that existed there before.

At Wayland the commission has built a section of road entirely of oil, or oil and asphalt, mixed with various grades of gravel, heated, the whole being thoroughly mixed by hand and then spread upon the road. This has made a most excellent road. It has the appearance of an ordinary asphalt road with a true crown and grade, and so far there have been but few complaints as to its slipperiness.

Results of this Season's Work.

It is perhaps not too much to say that, while the commission has used various bituminous binders, both with tar and asphalt bases, has employed various methods of construction and resurfacing and various methods and materials in surface coating, the roads where these materials have been used have almost invariably been in very satisfactory condition at the end of a year. They are certainly in better condition than most of the roads where no such materials have been used.

In only a very few instances have the roads failed, or gone to pieces, to any great extent. Some places have had to be patched, and occasionally certain spots have required extensive patching,

but in the main, while some are much better than others, it is true that almost every one of them is reasonably satisfactory. The failures have been very few and of very slight extent.

It is because of the indications as to comparative wear, because of slipperiness, etc., that the commission has been led to adopt one material rather than another.

It can fairly say, however, as a result of this season's work, that the use of bituminous binders in road material has, in its opinion, come to stay, and will be much more prevalent in the future than it has been in the past wherever there is much automobile traffic.

The doubt that exists is not as to the use of some bituminous binder, but which binder to use, and exactly what is the best method of applying it. It will undoubtedly be found that different localities and different materials require somewhat different binders and treatment, and by experience alone can a determination be made as to what will be the best to use in any given locality with the materials that are there available.

Methods of Application.

The English spraying machines, purchased by the commission, are in very common use in England, where many hundreds of miles of road are sprayed with tar annually, and their use in that country is constantly increasing.

It has been the practice in England to spray a thin coating of tar over the road without previously preparing the road surface to any great extent. The tar is spread in a very thin coat, the first coat varying from one-third to one-quarter of a gallon, or even less, to the square yard of surface. A second coat, sometimes being only one-eighth or one-ninth of a gallon to the square yard, is then applied. The English gallon, however, is about one-sixth larger than the standard gallon of this country.

The spraying machines which the commission purchased are made to hold the tar, heat it with a steam coil by means of steam provided by a traction engine or a steam roller, and spread it upon the road in a thin and even coat. The tar is kept under pressure by pumps geared to the wheels, so that a pressure is developed by the movement of the tar-spraying machine itself.

The tar is spread hot upon the road, under pressure, through

a number of fine nipples which make a very fine spray and cause the tar to spread evenly over the road and into the depressions. The nipples are on a long tube, and have a sort of hood to prevent the tar from being blown to one side by the wind. The machines work very well in applying an even coat of about one-quarter to one-third of a gallon to the square yard. Their use has given very good results, particularly in putting on one coat of tar. The machines have been hauled behind the steam roller which provided the steam for heating the tar. This method of hauling is, of course, somewhat expensive.

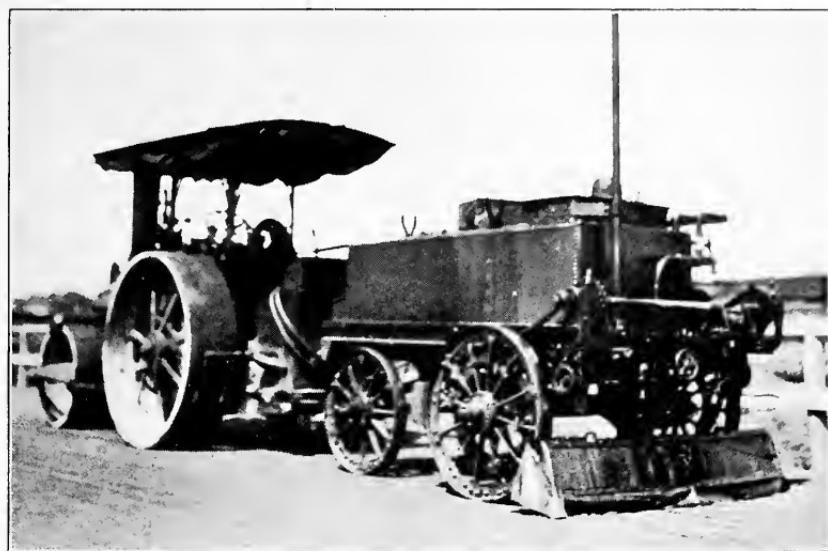
Early in the year the commission used heavy asphaltic oil in the spraying machines, and the machines worked very well on this work. At the beginning of the season the commission was handicapped by the inexperience of the persons selected to operate this particular type of machine, as no similar machines had previously been used on work in this country, and the costs of the work done were necessarily high, inasmuch as proper arrangements could not be made for the continuous use of the machines. Toward the end of the season, however, the costs were very much reduced.

One coat of oil, using one-fourth gallon to the square yard, including the cost of sand, oil, labor and expenses in connection with the steam roller, can probably be applied at a cost of less than 5 cents per square yard.

While the work of applying the oil by means of a spraying machine has been more economical than coating roads with oil in any other manner, it should be borne in mind that a smaller quantity of oil is used per square yard. It seems probable that a single coat of one-quarter of a gallon to the square yard will not be sufficient except upon roads which are in good condition. One-half gallon of oil to the square yard appears to give better results on most roads.

In other oil and tar work the material has been spread in various manners. The lighter oil was, in one instance, spread from a sort of trough made of two boards with an opening at the bottom, which was mounted on wheels and which received the oil from a barrel. The American Tar Company's distributor has been used, with very good results, where the quantity of ma-

STATE HIGHWAY, LYNN.



ENGLISH TAR-SPRAYING MACHINE.



SPRAYED WITH TAR, PARTIALLY COVERED.

terial to be spread was about one-half gallon to the square yard. Oil has also been applied from an ordinary half-moon watering cart. When the heavy asphaltic oil has been used, it has always been necessary to heat and apply it hot.

The cost of the surfacing work has varied greatly in different localities, as it depends largely on the length of the haul, the cost of the sand or gravel covering, and on whether or not the oil or tar was purchased in tank car lots or barrel lots. When the heavy grade of oil has been used and applied hot, at the rate of one-half gallon to the square yard, the cost has varied from 6 to 11 cents per square yard, which cost includes the cost of material, labor, and the surface covering of sand, gravel or stone screenings. In many instances these costs included considerable patching which it was necessary to do in order to prepare the road surface for the oiling. In general, it may be stated that a fair price for such work, complete, is from 6 to 8 cents per square yard.

On account of the increased efficiency of the employees of the commission, because of the experience gained during the past season, the cost of the work done with the tar-spraying machines will probably be largely diminished.

In all cases, before applying bitumen to a road, the surface should be carefully prepared, thoroughly cleaned and compacted, all holes and depressions filled, and the roads brought to as true a crown and grade as possible. The oil or tar should then be spread as evenly as possible over the surface of the road, brooming it where necessary to secure a uniform coating, and covered with sharp sand, gravel or stone screenings.

During the first few weeks after the road has been treated, covering material should be added whenever the oil or tar appears upon the surface.

If holes or depressions are left in the road, the water which lodges there soon causes the road to become ravelled.

Roads surfaced with any bituminous binder must shed water, or they will quickly go to pieces.

Dust pockets or loose material will invariably cause the surface to peel or scale. A road should be patched as soon as any sealing appears on the surface.

All loose material should be cleaned out of depressions, or the edges made straight, before the bituminous material is applied. The depressions should be filled with heated sand, gravel or chips, thoroughly mixed with hot oil or tar, and tamped into the depressions. Another method is to sprinkle the hot oil or tar into the depressions, after it is prepared, covering the material with all the sand, gravel or chips which it will take up. The material should be tamped and the process repeated until the depression is entirely filled.

TREE PLANTING ON STATE HIGHWAYS.

At the beginning of the year all trees growing within the limits of the State highways were placed under the charge of the forester, Mr. E. W. Breed. His work during the year has consisted of the care of the trees already planted and the removal of dead and worthless trees and dead branches, cutting back the brush on corners and thinning out the worthless trees in order to secure a clear view around the corners.

Many trees were found which were being injured by the feed wires of electric railways, and the companies were required to protect their wires. This they have done, and as a result many trees which would otherwise have been destroyed have been saved.

During the past year, 730 trees have been planted, making a total of 13,666 trees planted on State highways in the last six years. In the nursery 794 trees were replaced. There are now 1,070 trees on hand in the nursery, ready for planting, and something over 4,000 smaller trees.

Trees have been planted in 58 towns. The average cost of new planting was about 74 cents each, and the cost of preparing the ground was about 49 cents, making a total of \$1.23 for each tree set out. It has been necessary to water the trees set out this year on account of the drought, but the number of trees lost has been something under 6 per cent. of those set out, mainly from causes which were not under the control of the forester.

The commission has adopted the practice of putting manure under the roots of the trees in order to reduce the number of

weeds, instead of using it as a mulch. White clover has then been planted around the trees to crowd out the weeds. This has later been made use of as a fertilizer.

STATE HIGHWAY TRAFFIC CENSUS.

This year the commission decided to have a census taken of the traffic over its 740 miles of State highway. Such a study seemed very necessary, particularly because of the advent of the automobile, in order to determine what class and character of construction would best withstand the kind of traffic which each particular highway would have to bear.

An actual count was made in August at 237 stations and in October at 240 stations on State highways, and continued for fourteen hours each day.

On certain main roads leading into Boston records were taken in August, twenty-four hours a day, so as to include vehicles carrying milk and produce into Boston and the suburbs.

In addition to the records taken by the commission, the Metropolitan Park Commission, the Boston park commission and the street commissioner of Newton caused counts to be made of the traffic over certain roads under their respective jurisdictions.

The total average daily traffic at all stations and the percentages of different vehicles were as follows:—

Average Daily Traffic, All Stations.

	August Census	October Census
Horse-drawn:—		
Light,	19,622	16,456
Heavy,	17,969	17,967
	37,591	34,428
Automobiles:—		
Runabouts,	5,922	3,995
Touring cars,	21,387	14,514
Total,	27,309	18,509
All kinds,	64,900	52,952
Per cent. horse-drawn,	58	65
Per cent. automobile,	42	35

Average Traffic per Station per Day.

		August Census.	October Census.
Horse-drawn: —			
Light, . . . : . . . : . . . : .		83	69
Heavy, . . . : . . . : . . . : .		76	75
Total,		159	144
Automobiles,		115	77
All kinds,		274	221

It must be remembered that these statements are merely averages, and that the different stations varied greatly, both as to the amount of travel and as to the relative number of automobiles compared to horse-drawn vehicles. In some cases the automobiles greatly outnumbered the horse-drawn vehicles and in other cases the opposite was true.

The commission is printing in Appendix K the actual traffic census as taken by the observers, and also the census taken in the metropolitan and Boston parks and in Newton, as well as the census taken at night, so that the travel in the various localities can be compared.

It is interesting to note not only the difference in the volume of travel at different points on the same main route, but the relative importance of automobiles on the different routes and in different localities.

The average taken on any particular main route should not be understood to indicate through travel, because almost invariably some one or more of the stations in the middle of the route have relatively very little travel, but the average is brought up by stations nearer some large municipality, where the local travel is heavy. Of course, even the stations in between have some local travel.

At the request of the commission, Mr. A. B. Fletcher, secretary, has made a careful study and summary of this traffic census, and his report to the commission thereon will be found in the above-mentioned appendix. It contains much interesting

information and a number of tables showing the relative travel over the most important routes, not only out of Boston, but throughout the State.

BRIDGES.

Under chapter 136 of the Resolves of 1909 the commission was directed "to investigate the subject of causeways and bridges over lakes or ponds and all bridges over streams in the commonwealth which have a span of fifty feet or more, and which are contiguous to state highways, and on routes likely to become state highways in the near future," and to report the result of its investigation to the next General Court. The commission was also directed to include in its report brief descriptions of the present bridges and the approaches thereto, estimates of costs, reasonable detail as to their condition, annual cost of maintenance, as well as the cost of rebuilding and maintaining them during a period of twenty years.

During the past season the commission has had its engineers collect the necessary data to enable it to make a reasonably comprehensive and intelligent report upon the subject. It is manifest that the estimates of cost, maintenance, etc., can only be "estimates," and must be figured upon some uniform basis, which will not be the actual cost for the rebuilding of any given bridge but merely a fair average cost for all the bridges. It would be impossible, without careful study of each particular bridge, borings, soundings, etc., to get anything like an actual estimate.

In addition to the bridges mentioned, the commission has also secured data relating to various other large bridges in the Commonwealth, as it felt that that information was really necessary in order to form any estimate of the cost of rebuilding or maintaining the important bridges in the Commonwealth.

In collecting these reports the commission has interpreted "a 50-foot span" to mean not what would technically be known as a span, but a bridge 50 feet long.

The bridges were divided into classes, to wit:—

1. Causeways and bridges within the limits of the State highways. At the present time there are on file reports of 13 bridges that would come under this class.

2. Causeways and bridges contiguous to State highways. The reports show 74 bridges under this class.

3. Causeways and bridges on routes which are likely to become State highways in the near future. Under this class there are reports already on file of 51 such causeways and bridges.

4. Causeways and bridges over the larger streams, lakes, etc., in the Commonwealth. This class was intended to include as many of the important bridges as possible. There are already on file 551 reports of such bridges.

The information in regard to these bridges is now in the office of the commission and is being tabulated, and the various other estimates required are being made as rapidly as possible.

When it is considered that the city of Boston alone has paid for over 90 bridges, the construction of which cost nearly \$8,500,000 and the yearly maintenance more than \$220,000; that some of the counties in the Commonwealth have 60 or 70 bridges of varying lengths, various characters of construction and in varying conditions of repair; that there are, in the neighborhood of Springfield, 3 bridges over the Connecticut River where the distance between banks varies from 1,135 to 1,225 feet, and the cost has varied from \$30,000 for the old toll bridge to \$170,000 for the north end bridge; and that in addition to these there are 2 bridges over the Chicopee River which are over 200 feet in length, and 2 over the Agawam River 240 and 330 feet in length, respectively, it becomes evident that, to have such a report as this commission was requested to make of any value whatever, the details must be carefully studied, the results must be tabulated and some general conclusions must be formulated.

Therefore the commission does not feel that it is wise at this time to make any further report or to give any more details in regard to the matter; but as soon as possible it will submit a supplementary report, containing all the information which it has been able to collect on the subject it has been directed to inquire into.

RECOMMENDATIONS FOR LEGISLATION.

Maintenance of State Highways.

Every year it becomes more and more evident that the problem of maintenance, not only of State highways, but of all highways, is of constantly increasing importance. It is apparent that those much used by automobiles must either be constructed with some bituminous binder, or they must be protected with some surface covering.

The expense of maintenance of State highways, including ordinary repairs, resurfacing or surface treatment, probably will be somewhere between \$300 and \$500 a mile per year. The commission thinks it might be wise for the Legislature to consider the advisability of providing a law whereby a more equitable proportion of the cost of maintenance can be assessed upon and collected from the cities and towns in which the highways are built, or from the counties, or in part from both, than under the law now in force.

Maintenance of Small Town Roads.

It is evident that when roads are once built in the small towns which are aided by the Commonwealth under the present law, the money expended on construction is largely wasted unless these roads are properly repaired every year.

Under the existing law, the commission has authority to make needed repairs to such roads in cases where they are neglected by the towns themselves, and to charge the cost to such towns up to but not exceeding \$50 per mile per year.

In many cases this amount will be insufficient. The commission has, however, no funds available for this purpose. It therefore seems to be necessary, in order to make the present law operative, that the Legislature should provide a fund which the commission could use under such conditions. The commission recommends that \$5,000 be made available for this purpose.

Main Lines and Thoroughfares.

The general tendency of this and other States seems to be toward a more central authority directing and controlling the construction and maintenance of the main lines of travel, and

the division of roads into main thoroughfares, those of secondary importance, and local roads. Such a system would gradually bring more and more roads under the supervision and direction of competent engineers, and would lead not only to better roads, but to more economical expenditures.

It is self-evident that to make any such plan effective the necessary funds for construction and maintenance must be made available, and a comprehensive scheme carefully prepared by which it can be obtained in some fair and equitable manner.

Road Material.

All road-building material is getting scarcer every year, and its value is constantly increasing. It has seemed to the commission, therefore, that it might be wise if a law were passed to authorize not only the Massachusetts Highway Commission, but cities and towns, to purchase or take land for the purpose of obtaining road material, and to take rights of way thereto, the land to be taken in fee.

Under chapter 48 of the Revised Laws, sections 105 and 106, cities and towns have authority to take land in order to obtain material; but they can merely remove the material therefrom for a period of ten years, at the expiration of which time the land reverts to the owner. It is manifest that the cost of this ten-year privilege might equal the whole value of the land, and that roads will have to be repaired for all time to come.

All agreements, contracts or takings of land by the commission should be made subject to the approval of the Governor and Council; and a reasonable amount of money could be made available each year for this purpose, either by special appropriation or by making the money available from the loan fund, the motor vehicle fees fund or some other source.

Weekly Payments.

The commission has been embarrassed frequently because of the fact that it has had no considerable sum of money easily available with which to make payments to laborers engaged upon the work of repairing the State highways. There is a provision of law which requires that all laborers engaged upon such work shall be paid weekly. In the past such weekly payments could

WASHINGTON STREET, BOSTON.



THE OLD ROAD.



THE STATE HIGHWAY.

Photographs at Same Point, before and after Improvement.

not be made unless some individual was willing to advance the money, and wait usually not less than two weeks until he could be reimbursed through the State treasury.

In the year 1909 the Legislature passed an act authorizing advances to the institutions of the Commonwealth (Acts of 1909, chapter 218), which relieved somewhat similar conditions in the institutions. The commission believes that similar legislation would be of great benefit to the Massachusetts Highway Commission.

Annual Reports.

Chapter 9 of the Revised Laws provides that 4,500 copies of the annual report of the commission shall be printed each year. Of this edition only 500 copies have been supplied to the commission for distribution, and so small a number does not begin to be enough to supply the demand.

The commission recommends, therefore, that 5,000 copies be printed each year, and that 1,000 copies be furnished to it, of which 500 copies may be bound in paper covers.

Grade Crossings.

It has seemed to the commission that it would be wise to have some legislation adopted which would in some way protect the users of the highways as well as the railroad companies, when grade crossings are abolished. This might be accomplished by providing that there shall be a clear view ahead for some minimum distance (for instance, 150 to 200 feet) through the bridge or under-pass, and that on curves there shall be a clear and unobstructed view of the roadway for some minimum distance (for instance, 150 feet). The desired result could be obtained in many other ways by providing minimum tangents or curves, etc.

Such a law should require that when a crossing was abolished the rights of the users of the highway should be considered, and that the highway should be made reasonably safe and convenient for them. In many cases, familiar to every user of the highways, when grade crossings have been abolished conditions have been made even more dangerous than before, so far as the users of the highway were concerned.

There have been many instances where the under-pass or bridge was too narrow to be safe, and the curves approaching it were so abrupt that one could not see ahead for any reasonable distance. In some cases the narrow roadway has been occupied in part by an electric car track, and the under-pass has been so narrow that a good-sized team or automobile could not go under the railroad and turn the corner to go through the under-pass without turning onto the electric car tracks, with the chance of meeting an electric car at that point, there being practically no view ahead.

Civil Service.

It seems to this commission that it might be wise to provide by law that when any person has been employed under authority of the Civil Service Commission, whether provisionally, temporarily or otherwise, and has performed his duties satisfactorily for a suitable period of time, he shall not be discharged except by order of his employer, for cause, and after a hearing.

It might be wise to provide, also, that in any promotions in any particular employment from one class or grade of service to the one above it, experience in the particular line of work which the appointee has to perform shall be given proper prominence, and that such promotions of efficient and experienced public servants may be made either with or without examination.

Many times in the past, when the commission has desired the services of rodmen, instrumentmen, etc., and has made a requisition upon the Civil Service Commissioners for a person possessing the necessary qualifications, there have been no persons upon its lists whom it could certify.

This commission has, therefore, been authorized to make a so-called "provisional appointment." It has been obliged to find a person whom it could employ to do the work.

The services of such an employee, naturally, become more and more valuable to the Commonwealth as he acquires knowledge and experience in the particular kind of work that this commission has to do.

Several times in the past the Civil Service Commissioners, undoubtedly acting in good faith, under their interpretation

of the requirements of their rules, have felt obliged to direct this commission to discharge faithful and efficient employees who had been performing their duties in a satisfactory manner for two or more seasons, and to appoint a new and untried person who was certified by them. In one instance the employee sought to be replaced has been employed for many years.

It will manifestly hamper this commission in its work if it is required to discharge faithful and efficient employees because some one else has finally got upon the civil service list and desires the position, though he often possesses no experience in that particular class of work.

The commission feels, therefore, that it might be wise, in the best interests of the Commonwealth, to make clear by a proper law exactly what the powers, rights and duties of this and other commissions and the employers of labor are, not only in their relation to the civil service, but in regard to their own employees.

The law should determine on what terms employees can be employed, for what periods of time, what class of work they can be called upon to perform from time to time, and as to whether the power to determine these various matters in relation to such employment and the duties of the employees is to be vested in the employer, whose duty it is to see that the actual work required is properly performed, or in some one else.

SURVEYS AND ENGINEERING OFFICE WORK.

During the year ending Dec. 1, 1909, surveys for preliminary studies, estimates and lay-outs were made in 29 towns, covering a total distance of 36.29 miles; and grade stakes for construction work were set in 58 towns, covering a distance of 42.8 miles, some of the stakes having been set on roads which remained unfinished at the close of the season's work in 1908.

Final surveys were made in 31 towns, covering a total distance of 28.48 miles. Surveys for "small towns" were made in 50 towns, covering a total distance of 23.5 miles, and about 5 miles of miscellaneous surveys were made of roads to be constructed by towns.

Plans, profiles and cross-sections for roads in 25 towns were plotted, representing a distance of 34.5 miles.

Lay-out plans have been made of roads in 49 towns, covering a total distance of 36.53 miles.

Plans to accompany decrees for street railway locations on State highways and for provisional locations have been made in 16 towns.

Plans and profiles have been made for roads under the small town act in 47 towns, a distance of 19.8 miles.

Preliminary estimates of the cost of work in 81 towns, representing a distance of 66.73 miles, have been made, and final estimates of the cost of work in 69 towns, representing a distance of 87.59 miles.

AUTOMOBILE DEPARTMENT.

Automobile Law.

Up to the present time the commission has heard very few criticisms as to the uniform automobile law enacted last winter. It seems to be satisfactory in the main, and it seems wise to the commission, unless some serious defect is discovered which has not heretofore come to light, that the law should be left intact, and certainly without any substantial modifications or changes. The provisions of the law are now pretty well understood, and, of course, constant changes lead to great confusion, and render it impossible for the average automobilist to know what the law is.

The provisions in regard to speed limits seem to meet with universal approbation. The fee provision has proven to be satisfactory, and has not been complained of; and the same is true of the special speed regulations.

The only criticisms offered have been of a minor nature, and one or two have been caused by the narrow interpretation put upon the law by certain judges, contrary to the interpretation placed upon it by the vast majority of courts in which automobile cases have been tried. It is believed that these minor troubles will rectify themselves in a short time, as the law becomes better understood by the judges who administer it, the police officers who are to enforce it and the automobilists who must obey it.

The uniform automobile law which was passed at the last session of the Legislature seems to be effective, so far as the four

sections which went into effect on July 1 are concerned. The authorities of cities and towns, the public and the automobilists seem, in general, to be in accord with and to approve of the provisions of that law.

The Metropolitan Park Commission has practically adopted it in its regulations affecting the use of automobiles in the metropolitan parks. The Boston park commission has done the same, leaving the speed limits provided by law applicable throughout the parks and the city of Boston in general.

So far as special regulations are concerned, the commission has been asked to approve of a very few only. In the main these have related to the exclusion of automobiles from certain narrow and dangerous roads from which they had previously been excluded, from certain portions of the parks in the city of Boston, and from certain parks in Plymouth, Haverhill and other cities, and confining them to certain roadways in Newton, the Boston parks, etc.

Only one or two towns have even attempted to make any special speed regulations affecting particular roads.

The commission, feeling that it was only fair to the public and to all users of the highways that the new law should have a fair trial, has not up to the present time approved of any special speed regulations. It seemed to the commission that before such special regulations, differing from the general law, were approved, the necessity for them should be demonstrated by an honest and earnest effort to enforce the present law. It believes that such an enforcement would accomplish all that is desired by any reasonable person in the way of regulating the danger from automobiles.

In regard to the exclusion of automobiles from particular ways and roads, it does not seem at all likely that there will be any difference of opinion between the commission and the authorities of any city or town in the Commonwealth, certainly not as to the important highways, because the law itself provides that automobiles shall not be excluded from State highways or the main highways leading from one city or town to another.

Hearings.

During the last year the commission has devoted practically one day each week (Wednesday) to the consideration of automobile cases, hearing several cases during the day. It has also been necessary to hold hearings on other days in the week from time to time. During the year it has held 155 such hearings.

Licenses revoked or suspended.

During the year 68 licenses have been revoked and 132 licenses have been suspended for various terms and for various causes.

The law requires the commission to suspend the license of any operator who is involved in an automobile accident from which death results, and the license can only be given back if, after a hearing or upon an investigation, the commission finds that the accident happened without serious fault on the part of the operator. During the year 44 licenses have been suspended because of such deaths and 9 licenses have been revoked. In 31 cases the licenses have been restored, the commission finding that the accident happened without serious fault on the part of the operator. In several cases the operator was killed, so that no action could be taken.

In most of the cases where the licenses were restored the accidents were such as resulted from the fact that the injured had stopped, run or stepped back, without looking, directly in front of the automobile; they also stepped directly out from behind other vehicles or objects, when they were so close to the automobile that no care or skill on the part of the operator could enable him to avoid hitting them. In these cases the automobiles were being operated at reasonable rates of speed, considering all the attendant circumstances.

The commission is required to revoke the license of any operator who is convicted in court of operating recklessly, or so as to endanger the safety of the public, or while under the influence of intoxicating liquor. If an operator is sentenced in the lower court and appeals, the commission is required to suspend his

license until he is acquitted, or unless it otherwise orders after an investigation or hearing.

There have been 74 licenses suspended or revoked because of court records. There have been 24 licenses suspended or revoked upon complaints and after a hearing, and 102 licenses suspended or revoked as the result of an investigation, revocations being made only after a hearing.

During the year investigations have been made in 241 cases by investigators appointed by the commission. These investigators have prosecuted 33 offenders against the automobile law in the courts, and have secured 33 convictions.

Besides this, the commission has taken action upon their investigation, and has suspended licenses as a result of the findings of the investigators and on the facts presented by them. It has been the practice of the commission to suspend licenses in the first instance, and then to notify the operators to appear and show cause why their licenses should not be revoked, when the facts presented seemed to warrant such action.

In a few cases where the commission had suspended the licenses on the reports of its investigators or upon court records, hearings have been requested, and as a result of the facts presented at such hearings the licenses have been restored in a few instances. In the majority of cases, however, even after a hearing, the operators have acquiesced in the action taken, even though the commission has seen no reason for revising its former action.

It has been the practice of the commission to write cautionary letters to all operators who were several times convicted in court of minor offenses against the automobile law. It has also been the practice of the commission to suspend the licenses of any operator who has been convicted three times within the calendar year of violating the speed law. The law which goes into effect January 1 will require that the license be revoked in such cases.

Causes of Suspension or Revocation of Licenses.

Reckless operation,	81
Operating while under influence of liquor,	23
Accidents resulting in death,	44
Improper operation,	10
Refusing to stop after accident,	8
Convicted three times of overspeeding,	11
Operating automobile without owner's consent,	13
Sundry offenses,	10
<hr/>	
Total,	200

Automobile Accidents.

According to the reports received in the office of the commission there have been 1,130 automobile collisions during the year, 54 people have been killed and 989 injured. Of the 54 people killed, 19 were occupants of automobiles, 32 were pedestrians and 3 were bicycle riders. Of the people injured, 339 were occupants of automobiles and the balance were pedestrians, occupants of carriages and street car passengers. Of the collisions, 826 occurred in the daytime and 304 after dark; 816 on city or town streets and 314 in the open country.

Court Cases.

During the calendar year the commission received from the courts 4,271 abstracts containing the action taken in automobile cases.

These abstracts showed that 3,892 of the persons complained of were convicted, 163 were found not guilty, 482 cases were placed on file without sentence, and 264 cases were appealed.

The complaints and convictions were for various violations of law: 2,574 for overspeeding, 186 for violations of the park rules, 82 for reckless operation, 31 for operating while under the influence of intoxicating liquor, and 54 for refusing to stop when signalled to do so by an officer. The remainder of the complaints were for various offenses, like the improper display of number plates, operating without a license or without a registration certificate, or operating an unregistered vehicle.

In 229 cases persons were convicted of operating without the lights required by law, and in 60 cases for operating without having numbers on their lamps. The law which goes into effect Jan. 1, 1910, does not require numbers upon the lamps, but does require the rear number to be properly illuminated.

These abstracts show that fines aggregating \$40,721.60 were imposed.

Examinations for Licenses.

The number of examinations during the year of applicants for licenses to operate automobiles amounted to 4,629. This means that 3,473 persons were examined, 1,156 having been examined several times. The number of licenses issued thereon amounted to 3,149, 324 having been refused. In other words, 9.33 per cent. of the persons examined failed to pass, either upon examination or re-examination. Over 1,000 people failed upon their first examination, which amounts to something over 30 per cent.

More than one-half the examinations were held in Boston, the remainder being held in Brockton, Concord, Easthampton, Fall River, Fitchburg, Greenfield, Holyoke, Lawrence, Lowell, New Bedford, Pittsfield, Rockport, Salem, Springfield and Worcester.

Further details concerning the work of the automobile department will be found in Appendix J.

Automobile Fees.

The graded fee, which goes into effect Jan. 1, 1910, so far as the commission can learn, has been approved of by a vast majority, at least of the owners of high-powered cars.

During the year 1909, 23,971 automobiles and 2,394 motor cycles were registered. The amount of the fees collected from these automobiles, at \$5 each, was \$119,855; and the amount collected from the motor cycles was \$4,788, at \$2 each.

The total amount collected from registration fees, license fees, etc., was \$169,973.54. From this amount had to be paid the cost of number plates, salaries of clerks, investigators, etc., in the automobile department, as well as many other expenses, the balance being applicable to the repair of State highways.

Estimated Revenue from Automobiles in 1910.

So far as can be learned by counting the horse power of the automobiles registered, as returned by the persons registering them in 1909, the average fee to be collected in 1910 under the provision of law relating to graded fees will be \$8.84, instead of the \$5 flat fee which was collected in 1909. This small difference is accounted for by the fact that in the law enacted the Legislature retained the \$5 flat fee for all automobiles under 20 horse power.

According to the returns to the commission, it is estimated that more than one-half of all the cars registered were under 20 horse power.

Estimating the amount of revenue to be obtained from automobile fees in 1910, from automobile registrations and upon returns made in 1909, the total amount collected from automobiles in 1910 will be about \$210,000, as compared with \$119,855 collected in 1909. This estimate is based upon the assumption that the average fee is as figured, \$8.84, and also that the same number of cars will be registered in 1910 as were registered in 1909. There may be more automobiles registered, and their horse power may be found to be greater or less than the horse power stated in the applications received in 1909.

It must be remembered that all the expenses have to be paid before any of the money collected from automobile fees is available for use on the State highways.

CHANGES IN ORGANIZATION.

Since the commission was organized, in 1893, Mr. Austin B. Fletcher has acted as its secretary. In the organization of the commission and the work of its various departments his services have been of great value, continuing in office as he did from the beginning. Since 1901 Mr. Fletcher has not only served as secretary but he has been the executive officer of the Board, and, in a sense, its chief engineer, supervising the work of the division engineers and the engineering department of the Board, as well as the work of the automobile and telephone departments. His services had become extremely valuable to the Common-

wealth, and the commission has suffered a great loss in his accepting a position that was offered to him in the State of California, where he will have entire charge of the construction of many miles of highway. The commission wishes at this time to express its high appreciation of the valuable services which he so efficiently performed for so many years. He was an able, efficient and capable executive officer, of the highest personal integrity, clear sighted and of unusual ability, both in organization and construction. The resignation of Mr. Fletcher, with the constantly increasing work of the commission, has made it necessary to make changes in organization.

Mr. Frank I. Bieler, who has been acting as assistant secretary, has been promoted to the position of secretary.

Miss Mary A. Riley, who for years has had immediate charge of the records and various other official papers of the Board, under the direction of the secretary, has been appointed recording secretary.

Mr. Fred Fair, who has been in the office for many years, has been promoted to the office of assistant secretary.

On account of the increased work of the commission, it became necessary to appoint a chief engineer, to have the direction not only of the office engineering force and the force in the field making surveys, etc., but also of the resident engineers who are in charge of the construction and maintenance work in their various divisions throughout the State.

Mr. Arthur W. Dean has been chosen for this position. He has been for some years chief engineer of the State of New Hampshire, and has had charge of the construction of the State highway system in that State. He was born in Massachusetts, received his education in part at the Massachusetts Institute of Technology, was engaged in street railway work in New Hampshire and Massachusetts, and afterwards was made State engineer of New Hampshire.

EXPENDITURES.

The following is a summary of the expenditures of the Massachusetts Highway Commission from Dec. 1, 1908, to Nov. 30, 1909:—

CONSTRUCTION EXPENDITURES.

TOWN OR CITY.	Amount.	Totals.
<i>Barnstable County.</i>		
Barnstable,	\$376 48	
Brewster,	501 27	
Chatham,	5,948 85	
Dennis,	237 12	
Eastham,	1,910 75	
Falmouth,	3,229 59	
Harwich,	4,007 02	
Orleans,	1,634 09	
Provincetown,	2,137 88	
Truro,	17,673 44	
Yarmouth,	236 81	
		\$37,893 30
<i>Berkshire County.</i>		
Adams,	\$6,144 51	
Becket,	7 60	
Cheshire,	25 74	
Clarksburg,	8,766 14	
Dalton,	2 50	
Hancock,	54 85	
Hinsdale,	13 86	
Lee,	688 15	
Lenox,	950 74	
North Adams,	38 42	
Pittsfield,	12,987 14	
Richmond,	38 63	
Stockbridge,	2,624 36	
Williamstown,	13 83	
Windsor,	1,624 41	
		33,980 88
<i>Bristol County.</i>		
Attleborough,	\$5,079 85	
Dartmouth,	1 93	
Dighton,	4,555 20	
Fairhaven,	6 43	
Mansfield,	3 13	
Norton,	1,058 14	
Rehoboth,	862 68	
Somerset,	1 93	
Swansea,	4,515 42	
Taunton,	7 04	
Westport,	1 93	
		16,093 68
<i>Dukes County.</i>		
Chilmark,	\$5,205 39	
Oak Bluffs,	144 17	
		5,349 56
<i>Amount carried forward,</i>	.	\$93,317 42

CONSTRUCTION EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
<i>Amount brought forward,</i>	.	\$93,317 42
<i>Essex County.</i>		
Andover,	\$385 62	
Beverly,	42 93	
Essex,	53	
Gloucester,	717 13	
Groveland,	54	
Hamilton,	8,783 20	
Haverhill,	8,451 20	
Ipswich,	11,189 02	
Lawrence,	54	
Methuen,	1,649 33	
Newbury,	69 89	
Newburyport,	1 70	
North Andover,	926 62	
Rowley,	5,880 75	
Salem,	12,492 06	
Salisbury,	5 92	
Swampscott,	1 16	
Wenham,	94 78	
West Newbury,	14,530 42	
		65,223 34
<i>Franklin County.</i>		
Ashfield,	\$0 50	
Buckland,	50	
Colrain,	50	
Deerfield,	12,159 34	
Erving,	8,399 43	
Greenfield,	2 23	
Montague,	7,079 51	
Northfield,	2 43	
Orange,	56 13	
Shelburne,	50	
Sunderland,	2,698 72	
		30,399 79
<i>Hampden County.</i>		
Agawam,	\$10,967 10	
Brimfield,	13 46	
Chester,	8,911 27	
Chicopee,	258 33	
Monson,	928 91	
Palmer,	11,565 49	
Westfield,	51 24	
Wilbraham,	567 89	
		33,263 69
<i>Amount carried forward,</i>	.	\$222,204 24

CONSTRUCTION EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
<i>Amount brought forward,</i>	.	\$222,204 24
<i>Hampshire County.</i>		
Amherst,	\$10 10	
Belchertown,	1 22	
Easthampton,	184 38	
Goshen,	608 87	
Granby,	1,345 77	
Hadley,	581 61	
Hatfield,	4,326 23	
Huntington,	2,218 38	
Northampton,	227 52	
South Hadley,	5,245 04	
Southampton,	3,277 56	
Ware,	1 22	
Williamsburg,	2 50	
		18,030 40
<i>Middlesex County.</i>		
Acton,	\$33 30	
Ashby,	679 59	
Bedford,	2 70	
Billerica,	5,887 22	
Chelmsford,	629 92	
Concord,	53 22	
Dracut,	607 55	
Framingham,	124 02	
Groton,	1,286 50	
Holliston,	2 85	
Lexington,	1 10	
Littleton,	588 12	
Lowell,	49 81	
Marlborough,	3,646 09	
Medford,	47 49	
Melrose,	53	
Natick,	387 82	
North Reading,	31 96	
Pepperell,	1,286 49	
Reading,	259 48	
Somerville,	6,822 81	
Stoneham,	31 58	
Sudbury,	233 07	
Tewksbury,	36 06	
Townsend,	68 02	
Tyngsborough,	52 76	
Wayland,	1 10	
Weston,	1 10	
Wilmington,	395 77	
Winchester,	2 15	
		23,250 18
<i>Amount carried forward,</i>	.	\$263,484 82

CONSTRUCTION EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
<i>Amount brought forward,</i>	.	\$263,484 82
<i>Norfolk County.</i>		
Bellingham,	\$2 85	
Braintree, .	75	
Canton, .	363 82	
Cohasset, .	1 40	
Dover, .	479 71	
Foxborough,	4,903 58	
Franklin, .	2 85	
Needham, .	6 49	
Norfolk, .	18 14	
Norwood, .	51 33	
Quincy, .	1 40	
Randolph, .	2,588 00	
Sharon, .	1,092 01	
Walpole, .	98 90	
Wellesley, .	19 72	
Westwood, .	23 23	
Weymouth, .	3,474 06	
Wrentham, .	25 55	
		13,153 79
<i>Plymouth County.</i>		
Abington, .	\$0 75	
Bridgewater, .	92	
Brockton, .	75	
Duxbury, .	6,223 09	
Hanover, .	242 55	
Hingham, .	52 25	
Kingston, .	1 40	
Lakeville, .	65	
Marion, .	10 90	
Marshfield, .	4,649 72	
Mattapoisett, .	4 18	
Middleborough, .	1,225 76	
Plymouth, .	1 40	
Rochester, .	2,287 59	
Scituate, .	7,720 34	
Wareham, .	2,549 70	
		24,971 95
<i>Worcester County.</i>		
Athol (bridge), .	\$520 76	
Auburn, .	36 76	
Barre, .	42 61	
Brookfield, .	51 92	
Charlton, .	859 25	
Dudley, .	2 23	
Fitchburg, .	51 11	
<i>Amounts carried forward,</i>	\$1,564 64	\$301,610 56

CONSTRUCTION EXPENDITURES — *Concluded.*

TOWN OR CITY.	Amount.	Totals.
<i>Amounts brought forward,</i>	\$1,564 64	\$301,610 56
Gardner,	1,411 96	
Grafton,	25 21	
Hardwick,	1 22	
Holden,	2,437 96	
Leicester,	264 97	
Leominster,	1 15	
Lunenburg,	50	
Milford,	6,474 71	
North Brookfield,	1 15	
Northborough,	14 58	
Oxford,	8,975 67	
Paxton,	3 56	
Phillipston,	4,952 48	
Princeton,	22 59	
Shrewsbury,	408 01	
Southborough,	2,915 04	
Southbridge,	2 24	
Spencer,	28 21	
Sterling,	5,203 49	
Sturbridge,	4,691 15	
Templeton,	7,623 73	
Uxbridge,	2,431 49	
Warren,	43 02	
Webster,	62 87	
West Brookfield,	54 94	
Westborough,	15 87	
Westminster,	350 70	
Winchendon,	101 74	
Worcester,	5 06	
		50,089 91
		\$351,700 47

REPAIR AND MAINTENANCE EXPENDITURES.

[Under chapters 212 and 657 of the Acts of 1908 and chapters 127 and 493 of the Acts of 1909.]

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Barnstable County.</i>				
Barnstable, . . .	\$156 34	\$417 85	\$574 19	
Bourne, . . .	70	1,249 55	1,250 25	
Brewster, . . .	1 20	519 92	521 12	
Chatham, . . .	18 07	439 82	457 89	
Dennis, . . .	15 08	443 48	458 56	
Eastham, . . .	9 88	509 77	519 65	
Falmouth, . . .	205 14	1,221 95	1,427 09	
Harwich, . . .	69 72	373 23	442 95	
Orleans, . . .	4 14	286 71	290 85	
Provincetown, . . .	17	264 78	264 95	
Sandwich, . . .	44	176 11	176 55	
Truro, . . .	150 43	531 83	682 26	
Wellfleet, . . .	40 04	579 52	619 56	
Yarmouth (north), .	10 57	384 52	395 09	
Yarmouth (south), .	10 80	421 35	432 15	
	\$692 72	\$7,820 39	\$8,513 11	\$8,513 11
<i>Berkshire County.</i>				
Adams, . . .	\$48 60	\$699 50	\$748 10	
Becket, . . .	2 14	352 16	354 30	
Cheshire, . . .	30	160 82	161 12	
Clarksburg, . . .	-	84 73	84 73	
Dalton, . . .	2 50	218 97	221 47	
Great Barrington, . . .	-	295 63	295 63	
Hancock, . . .	-	939 68	939 68	
Hinsdale, . . .	-	54 41	54 41	
Lee, . . .	32 69	2,701 72	2,734 41	
Lenox, . . .	51 64	6,817 19	6,868 83	
North Adams, . . .	8 38	549 69	558 07	
Pittsfield . . .	756 08	2,126 25	2,882 33	
Richmond, . . .	-	217 50	217 50	
Stockbridge, . . .	74 96	234 32	309 28	
Williamstown, . . .	5 80	188 57	194 37	
Windsor, . . .	-	22 05	22 05	
	\$983 09	\$15,663 19	\$16,646 28	16,646 28
<i>Bristol County.</i>				
Acushnet, . . .	\$48 60	\$232 69	\$281 29	
Attleborough, . . .	50 91	236 30	287 21	
Berkley, . . .	12	29 01	29 13	
Dartmouth, . . .	161 60	2,505 72	2,667 32	
Dighton, . . .	33	74 25	74 58	
Easton, . . .	66 57	88	67 45	
<i>Am'ts carried for'd,</i> . . .	\$328 13	\$3,078 85	\$3,406 98	\$25,159 39

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd,</i> .	\$328 13	\$3,078 85	\$3,406 98	\$25,159 39
Fairhaven, . . .	84 52	92 09	176 61	
Freetown, . . .	231 10	188 36	419 46	
Mansfield, . . .	19	80 75	80 94	
North Attleborough, .	1 56	199 86	201 42	
Norton, . . .	61 62	137 07	198 69	
Raynham, . . .	21 53	74 45	95 98	
Rehoboth, . . .	69 34	324 08	393 42	
Seekonk, . . .	43	16 45	16 88	
Somerset, . . .	151 74	515 49	667 23	
Swansea, . . .	15 08	135 46	150 54	
Taunton, . . .	1 37	275 23	276 60	
Westport, . . .	53 30	290 09	343 39	
	\$1,019 91	\$5,408 23	\$6,428 14	6,428 14
<i>Dukes County.</i>				
Chilmark, . . .	\$6 93	\$195 13	\$202 06	
Edgartown, . . .	—	2,374 90	2,374 90	
Oak Bluffs, . . .	37	2,957 91	2,958 28	
Tisbury, . . .	30	100 92	101 22	
	\$7 60	\$5,628 86	\$5,636 46	5,636 46
<i>Essex County.</i>				
Amesbury, . . .	\$49 68	\$83 67	\$133 35	
Andover, . . .	96 38	5,946 77	6,043 15	
Beverly, . . .	429 53	2,781 64	3,211 17	
Essex, . . .	1,114 39	1,464 49	2,578 88	
Gloucester, . . .	117 06	7,677 37	7,794 43	
Groveland, . . .	171 95	131 86	303 81	
Hamilton, . . .	89 55	44 75	134 30	
Haverhill, . . .	11 68	189 10	200 78	
Ipswich, . . .	19 00	217 71	236 71	
Lawrence, . . .	—	28 89	28 89	
Lynn, . . .	36 90	1,559 60	1,596 50	
Merrimac, . . .	64 71	101 97	166 68	
Methuen, . . .	106 38	56 19	162 57	
Newbury, . . .	42 68	1,603 78	1,646 46	
Newburyport, . . .	38 44	5,338 04	5,376 48	
North Andover, . .	178 36	177 63	355 99	
Rockport, . . .	—	119 65	119 65	
Rowley, . . .	91 91	383 35	475 26	
Salem, . . .	—	12 44	12 44	
Salisbury, . . .	12 02	70 27	82 29	
Saugus, . . .	—	287 38	287 38	
<i>Am'ts carried for'd,</i> .	\$2,670 62	\$28,276 55	\$30,947 17	\$37,223 99

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd,</i>	\$2,670 62	\$28,276 55	\$30,947 17	\$37,223 99
Swampscott, . . .	—	949 42	949 42	
Wenham, . . .	908 62	891 57	1,800 19	
West Newbury, . . .	219 12	5,962 47	6,181 59	
	\$3,798 36	\$36,080 01	\$39,878 37	39,878 37
<i>Franklin County.</i>				
Ashfield, . . .	—	\$228 05	\$228 05	
Buckland, . . .	\$6 32	505 46	511 78	
Charlemont, . . .	19 62	234 50	254 12	
Colrain, . . .	4 65	135 32	139 97	
Deerfield, . . .	3 00	655 66	658 66	
Erving, . . .	—	364 90	364 90	
Greenfield, . . .	—	304 44	304 44	
Montague, . . .	—	265 31	265 31	
Northfield, . . .	—	146 53	146 53	
Orange, . . .	1 76	4,678 64	4,680 40	
Shelburne, . . .	2 37	262 34	264 71	
Sunderland, . . .	—	90 98	90 98	
Whately, . . .	—	5,204 05	5,204 05	
	\$37 72	\$13,076 18	\$13,113 90	13,113 90
<i>Hampden County.</i>				
Agawam, . . .	—	\$132 91	\$132 91	
Brimfield, . . .	—	61 91	61 91	
Chester, . . .	\$15 24	423 00	438 24	
Chicopee, . . .	92 60	1,458 48	1,551 08	
East Longmeadow, .	15 15	54 09	69 24	
Monson, . . .	—	93 61	93 61	
Palmer, . . .	50	2,287 47	2,287 97	
Russell, . . .	2 14	3,361 07	3,363 21	
Wales, . . .	—	31 92	31 92	
West Springfield, .	—	3,907 37	3,907 37	
Westfield, . . .	—	8,991 70	8,991 70	
Wilbraham, . . .	—	802 50	802 50	
	\$125 63	\$21,606 03	\$21,731 66	21,731 66
<i>Hampshire County.</i>				
Amherst, . . .	—	\$83 11	\$83 11	
Belchertown, . . .	—	70 52	70 52	
Easthampton, . . .	—	151 60	151 60	
Goshen, . . .	—	124 87	124 87	
Granby, . . .	—	2,631 81	2,631 81	
Hadley, . . .	—	851 14	851 14	
Hatfield, . . .	—	23 40	23 40	
<i>Am'ts carried for'd,</i>	—	\$3,936 45	\$3,936 45	\$111,947 92

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd,</i> .	-	\$3,936 45	\$3,936 45	\$111,947 92
Huntington, . . .	2 14	19 25	21 39	
Northampton, . . .	-	2,068 13	2,068 13	
South Hadley, . . .	13 08	5,184 22	5,197 30	
Southampton, . . .	108 77	31 00	139 77	
Ware, . . .	-	683 43	683 43	
Williamsburg, . . .	-	764 18	764 18	
	\$123 99	\$12,686 66	\$12,810 65	12,810 65
<i>Middlesex County.</i>				
Acton,	\$5 60	\$563 36	\$568 96	
Ashby,	-	3,105 13	3,105 13	
Ashland,	43 25	344 35	387 60	
Bedford,	90 42	107 55	197 97	
Billerica,	-	27 91	27 91	
Boxborough,	2 49	182 17	184 66	
Burlington,	23 55	546 03	569 58	
Chelmsford,	169 32	561 30	730 62	
Concord,	111 78	5,687 96	5,799 74	
Dracut,	207 70	47 53	255 23	
Framingham,	53 50	111 73	165 23	
Groton,	02	59 75	59 77	
Holliston,	-	104 98	104 98	
Hudson,	24 25	53 00	77 25	
Lexington,	91 55	498 12	589 67	
Lincoln,	65 13	346 05	411 18	
Littleton,	-	306 32	306 32	
Lowell (east),	-	39 39	39 39	
Lowell (north),	30 04	409 68	439 72	
Lowell (south),	80	333 68	334 48	
Marlborough,	129 05	3,661 94	3,790 99	
Medford,	94 36	429 17	523 53	
Melrose,	-	19 51	19 51	
Natick,	74 63	273 56	348 19	
Newton,	70	8 59	9 29	
North Reading,	1 75	393 68	395 43	
Reading,	247 39	2,302 87	2,550 26	
Stoneham,	159 85	465 19	625 04	
Somerville,	04	400 15	400 19	
Sudbury,	10 77	2,327 86	2,338 63	
Tewksbury,	140 14	253 32	393 46	
Townsend,	3 08	710 52	713 60	
Tyngsborough,	36 83	528 47	565 30	
Watertown,	47 66	137 01	184 67	
Wayland,	103 12	4,202 98	4,306 10	
<i>Am'ts carried for'd,</i> . .	\$1,968 77	\$29,550 81	\$31,519 58	\$124,758 57

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd,</i>	\$1,968 77	\$29,550 81	\$31,519 58	\$124,758 57
Westford, . . .	—	263 23	263 23	
Weston, . . .	79 55	1,461 76	1,541 31	
Wilmington, . . .	—	26 47	26 47	
Winchester, . . .	81 92	532 73	614 65	
Woburn, . . .	12 70	386 41	399 11	
	\$2,142 94	\$32,221 41	\$34,364 35	34,364 35
<i>Nantucket County.</i>				
Nantucket, . . .	\$1 00	\$10,520 34	\$10,521 34	10,521 34
<i>Norfolk County.</i>				
Bellingham, . . .	\$0 02	\$107 68	\$107 70	
Braintree, . . .	16	99 86	100 02	
Canton, . . .	50	999 92	1,000 42	
Cohasset, . . .	75 21	45 52	120 73	
Dover, . . .	167 54	93 15	260 69	
Foxborough, . . .	44	226 29	226 73	
Franklin, . . .	—	67 93	67 93	
Holbrook, . . .	27	32 04	32 31	
Milton, . . .	12 14	57 62	69 76	
Needham, . . .	64 38	55 98	120 36	
Norfolk, . . .	22	502 38	502 60	
Norwood; . . .	32	1,622 96	1,623 28	
Plainville, . . .	48	935 05	935 53	
Quincy, . . .	21 10	394 40	415 50	
Randolph, . . .	21	158 92	159 13	
Sharon, . . .	10 33	55 46	65 79	
Stoughton, . . .	2 76	955 39	958 15	
Walpole, . . .	70	2,540 95	2,541 65	
Wellesley, . . .	17 06	151 13	168 19	
Westwood, . . .	16	21 40	21 56	
Weymouth, . . .	193 74	599 27	793 01	
Wrentham, . . .	10 38	1,570 33	1,580 71	
	\$578 12	\$11,293 63	\$11,871 75	11,871 75
<i>Plymouth County.</i>				
Abington, . . .	\$1 49	\$203 74	\$205 23	
Bridgewater, . . .	20 54	336 93	357 47	
Brockton, . . .	198 54	146 23	344 77	
Duxbury, . . .	69	375 56	376 25	
Hanover, . . .	29	153 81	154 10	
Hingham, . . .	93 59	486 07	579 66	
Kingston, . . .	59 51	119 59	179 10	
Lakeville, . . .	55	173 13	173 68	
<i>Am'ts carried for'd,</i>	\$375 20	\$1,995 06	\$2,370 26	\$181,516 01

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd,</i>	\$375 20	\$1,995 06	\$2,370 26	\$181,516 01
Marion, . . .	1 31	6,552 91	6,554 22	
Marshfield, . . .	71	313 19	313 90	
Mattapoisett, . . .	70 58	1,488 33	1,558 91	
Middleborough, . . .	70 80	253 54	324 34	
Pembroke, . . .	91 58	35 54	127 12	
Plymouth, . . .	3 42	442 94	446 36	
Rochester, . . .	82	98 74	99 56	
Rockland, . . .	175 14	246 32	421 46	
Scituate, . . .	64	406 81	407 45	
Wareham, . . .	106 44	2,983 18	3,089 62	
West Bridgewater, . . .	49	8,007 20	8,007 69	
Whitman, . . .	36	73 51	73 87	
	\$897 49	\$22,897 27	\$23,794 76	23,794 76
<i>Suffolk County.</i>				
Chelsea, . . .	\$35 75	\$94 21	\$129 96	
Revere (east), . . .	—	198 22	198 22	
Revere (west), . . .	—	277 76	277 76	
	\$35 75	\$570 19	\$605 94	605 94
<i>Worcester County.</i>				
Athol, . . .	\$1 52	\$242 90	\$244 42	
Auburn, . . .	4 97	4,299 23	4,304 20	
Barre, . . .	—	126 65	126 65	
Blackstone, . . .	—	131 50	131 50	
Brookfield, . . .	12 38	608 41	620 79	
Charlton, . . .	55	573 91	574 46	
Douglas, . . .	39 26	134 39	173 65	
Dudley, . . .	1 00	439 38	440 38	
Fitchburg, . . .	27 68	417 56	445 24	
Gardner, . . .	—	859 56	859 56	
Grafton, . . .	61 77	2,404 42	2,466 19	
Hardwick, . . .	—	217 87	217 87	
Harvard, . . .	17 26	45 84	63 10	
Holden, . . .	11 40	6,048 91	6,060 31	
Lancaster, . . .	—	64 28	64 28	
Leicester, . . .	185 69	2,222 59	2,408 28	
Leominster, . . .	14 95	257 03	271 98	
Lunenburg, . . .	9 90	290 06	299 96	
Milford, . . .	—	163 80	163 80	
Millbury, . . .	56 32	473 66	529 98	
New Braintree, . . .	—	36 03	36 03	
North Brookfield, . . .	1 70	113 11	114 81	
Northborough, . . .	138 98	1,588 83	1,727 81	
<i>Am'ts carried for'd,</i>	\$585 33	\$21,759 92	\$22,345 25	\$205,916 71

REPAIR AND MAINTENANCE EXPENDITURES — Concluded.

TOWN OR CITY.	PAID FROM REVENUE.		Amount.	Totals.
	Chapters 212 and 657, 1908.	Chapters 127 and 493, 1909.		
<i>Am'ts brought for'd, .</i>	\$585 33	\$21,759 92	\$22,345 25	\$205,916 71
Oxford, . . .	—	131 52	131 52	
Paxton, . . .	65	3,781 32	3,781 97	
Phillipston, . . .	19 84	186 67	206 51	
Princeton, . . .	90	—	90	
Rutland, . . .	—	270 18	270 18	
Shrewsbury, . . .	31 45	1,916 81	1,948 26	
Southborough, . . .	23 99	412 25	436 24	
Southbridge, . . .	28 33	59 64	87 97	
Spencer, . . .	5 05	2,752 03	2,757 08	
Sterling, . . .	5 60	476 62	482 22	
Sturbridge, . . .	70	44 62	45 32	
Sutton, . . .	65	249 87	250 52	
Templeton, . . .	—	350 30	350 30	
Uxbridge, . . .	90	132 70	133 60	
Warren, . . .	36 64	601 97	638 61	
Webster, . . .	—	130 49	130 49	
Westborough, . . .	18 02	141 73	159 75	
West Boylston, . . .	20	397 86	398 06	
West Brookfield, . . .	10 65	394 84	405 49	
Westminster, . . .	—	660 42	660 42	
Winchendon, . . .	—	53 41	53 41	
Worcester, . . .	90	6,392 91	6,393 81	
	\$769 80	\$41,298 08	\$42,067 88	42,067 88
<i>Total, . . .</i>	• • •	• • •	• • •	\$247,984 59

EXPENDITURES FOR REPAIRS OF STATE HIGHWAYS.

[Under Chapter 642, Acts of 1908.]

Motor Vehicles Fees Fund.

Agawam,	.	.	.	.	.	\$1,448	33
Amesbury,	.	.	.	.	.	60	
Andover,	.	.	.	.	.	973	34
Ashby,	.	.	.	.	.	19	25
Auburn,	.	.	.	.	.	6,325	96
Barre,	.	.	.	.	.	104	98
Becket,	.	.	.	.	.	143	60
Bedford,	.	.	.	.	.	1	99
Bellingham,	.	.	.	.	.	60	
Beverly,	.	.	.	.	.	1,260	98
Blackstone,	.	.	.	.	.	40	
Bourne,	.	.	.	.	.	1,630	85
Brockton,	.	.	.	.	.	27	68
Brookfield,	.	.	.	.	.	527	51
Canton,	.	.	.	.	.	2,063	02
Charlton,	.	.	.	.	.	43	81
Chelmsford,	.	.	.	.	.	20	
Chelsea,	.	.	.	.	.	75	
Chicopee,	.	.	.	.	.	3	10
Concord,	.	.	.	.	.	216	81
Dartmouth,	.	.	.	.	.	19	13
Dighton,	.	.	.	.	.	24	20
Douglas,	.	.	.	.	.	53	75
Dover,	.	.	.	.	.	80	
Eastham,	.	.	.	.	.	2	16
Easton,	.	.	.	.	.	12	62
Edgartown,	.	.	.	.	.	248	44
Erving,	.	.	.	.	.	4	84
Essex,	.	.	.	.	.	85	09
Framingham,	.	.	.	.	.	40	
Franklin,	.	.	.	.	.	40	
Gardner,	.	.	.	.	.	430	72
Gloucester,	.	.	.	.	.	834	03
Grafton,	.	.	.	.	.	627	42
Granby,	.	.	.	.	.	112	37
Great Barrington,	.	.	.	.	.	1,510	80
Groton,	.	.	.	.	.	25	00
Groveland,	.	.	.	.	.	65	
Hadley,	.	.	.	.	.	44	62
Hamilton,	.	.	.	.	.	199	45
<i>Amount carried forward.</i>						\$19,030	65

<i>Amount brought forward,</i>	.	.	.	.	\$19,030	65
Haverhill,	.	.	.	.	1	00
Hingham,	.	.	.	.	4,167	71
Holden,	.	.	.	.	666	11
Holliston,	.	.	.	.	45	
Hudson,	.	.	.	.	10	
Huntington,	.	.	.	.	183	59
Ipswich,	.	.	.	.	571	73
Lawrence,	.	.	.	.	1	00
Lee,	.	.	.	.	3,169	65
Leicester,	.	.	.	.	8,476	21
Lenox,	.	.	.	.	5,570	38
Lexington,	.	.	.	.	900	96
Lincoln,	.	.	.	.	299	82
Lowell,	.	.	.	.	196	14
Lynn,	.	.	.	.	972	79
Marion,	.	.	.	.	1,045	88
Marlborough,	.	.	.	.	223	33
Mattapoisett,	.	.	.	.	266	49
Merrimac,	.	.	.	.	90	
Methuen,	.	.	.	.	50	
Nantucket,	.	.	.	.	112	40
Natick,	.	.	.	.	84	
Newbury,	.	.	.	.	1,177	80
Newburyport,	.	.	.	.	232	26
Norfolk,	.	.	.	.	2,594	61
North Adams,	.	.	.	.	1,252	90
Northampton,	.	.	.	.	48	63
North Andover,	.	.	.	.	40	
Northborough,	.	.	.	.	878	05
North Reading,	.	.	.	.	40	
Norwood,	.	.	.	.	1,343	43
Oak Bluffs,	.	.	.	.	248	46
Orange,	.	.	.	.	11	55
Palmer,	.	.	.	.	534	38
Paxton,	.	.	.	.	7,559	58
Pittsfield,	.	.	.	.	236	74
Plainville,	.	.	.	.	2,659	56
Quincy,	.	.	.	.	1,009	21
Randolph,	.	.	.	.	1,026	63
Reading,	.	.	.	.	453	29
Revere (east),	.	.	.	.	33	86
Revere (west),	.	.	.	.	3,390	87
Rowley,	.	.	.	.	45	45
<i>Amount carried forward,</i>	.	.	.	.	\$70,596	69

<i>Amount brought forward,</i>	.	.	.	.	\$70,596	69
Russell,	.	.	.	.	550	95
Salem,	.	.	.	.	26	55
Salisbury,	.	.	.	.	906	76
Saugus,	.	.	.	.	2,599	98
Seekonk,	.	.	.	.	6	15
Shrewsbury,	.	.	.	.	2,490	70
Somerset,	.	.	.	.	591	82
Southborough,	.	.	.	.	42	75
Southbridge,	.	.	.	.	4	00
South Hadley,	.	.	.	.	199	74
Spencer,	.	.	.	.	774	23
Stockbridge,	.	.	.	.	610	25
Stoneham,	.	.	.	.	417	99
Stoughton,	.	.	.	.	737	91
Sudbury,	.	.	.	.	3,276	24
Swampscott,	.	.	.	.	762	58
Taunton,	.	.	.	.	34	80
Tewksbury,	.	.	.	.	3,724	64
Walpole,	.	.	.	.	6,898	96
Wareham,	.	.	.	.	3,152	39
Warren,	.	.	.	.	243	69
Watertown,	.	.	.	.	3,101	38
Wayland,	.	.	.	.	476	66
Webster,	.	.	.	.	50	43
Wellesley,	.	.	.	.		85
Wellfleet,	.	.	.	.	5	20
Wenham,	.	.	.	.	1,485	44
West Bridgewater,	.	.	.	.	758	96
West Brookfield,	.	.	.	.	47	88
Westminster,	.	.	.	.	1,860	08
West Newbury,	.	.	.	.	249	29
Weston,	.	.	.	.	1,829	04
West Springfield,	.	.	.	.	1,099	86
Westwood,	.	.	.	.	338	52
Whately,	.	.	.	.	633	14
Wilbraham,	.	.	.	.	186	67
Williamstown,	.	.	.	.	1,412	85
Wilmington,	.	.	.	.	747	17
Worcester,	.	.	.	.	2,802	42
Wrentham,	.	.	.	.	1,696	22
						\$117,431	83	
<i>Traffic census :—</i>								
Paid observers,	.	.	.	.	\$4,377	23
Printing,	.	.	.	.	76	68
<i>Amounts carried forward,</i>	\$4,453	91	\$117,431	83

<i>Amounts brought forward,</i>	.	.	.	.	\$4,453	91	\$117,431	83
Postage,	.	.	.	.	127	40		
Office expense,	.	.	.	.	40	50		
Miscellaneous expense,	.	.	.	.	38	73		
							<hr/>	<hr/>
							4,660	54
Miscellaneous :—								
Analysis of tar and oil,	.	.	.	.	\$2,579	16		
Cost of tar-spraying machines,	.	.	.	.	3,181	61		
Duty on tar-spraying machines,	.	.	.	.	1,370	15		
Tar and oil kettles,	.	.	.	.	335	00		
Wagons for distributing oil and tar,	.	.	.	.	413	00		
Automobile and supplies,	.	.	.	.	1,701	28		
Graders,	.	.	.	.	426	42		
Petrolithic roller,	.	.	.	.	762	50		
Repair of road roller,	.	.	.	.	850	00		
Miscellaneous items,	.	.	.	.	419	52		
							<hr/>	<hr/>
Cost of engineering,	.	.	.	.			12,038	64
							<hr/>	<hr/>
							20,000	00
							\$154,131	01

EXPENDITURES UNDER "SMALL TOWN" ACTS.

[Chapter 47, Revised Laws, and Chapter 279, Acts of 1908.]

Alford,	.	.	.	.	.	.	.	\$47	98
Ashburnham,	.	.	.	.	.	.	.	555	29
Avon,	.	.	.	.	.	.	.	444	23
Ayer (two contracts),	.	.	.	.	.	.	.	1,388	23
Becket,	.	.	.	.	.	.	.	87	96
Berlin,	.	.	.	.	.	.	.	888	46
Bernardston,	.	.	.	.	.	.	.	666	35
Bolton,	.	.	.	.	.	.	.	544	19
Boxford,	.	.	.	.	.	.	.	423	13
Carlisle,	.	.	.	.	.	.	.	777	41
Carver (two contracts),	.	.	.	.	.	.	.	4,079	19
Charlemont,	.	.	.	.	.	.	.	684	32
Chesterfield,	.	.	.	.	.	.	.	222	12
Cummington,	.	.	.	.	.	.	.	53	55
Easton,	.	.	.	.	.	.	.	4,442	34
Essex,	.	.	.	.	.	.	.	111	06
Florida,	.	.	.	.	.	.	.	721	89
Georgetown,	.	.	.	.	.	.	.	877	36
Granville (two contracts),	.	.	.	.	.	.	.	999	52
Hampden,	.	.	.	.	.	.	.	555	29
Hawley,	.	.	.	.	.	.	.	333	17
<i>Amount carried forward.</i>									\$18,903	04

<i>Amount brought forward,</i>	.	.	.	.	.	\$18,903 04
Heath,	.	.	.	.	.	999 52
Huntington,	.	.	.	.	.	163 08
Lanesborough,	.	.	.	.	.	499 76
Leverett,	.	.	.	.	.	610 82
Littleton,	.	.	.	.	.	1,999 05
Marblehead (two contracts),	.	.	.	.	.	4,492 80
Maynard,	.	.	.	.	.	1,665 87
Medway,	.	.	.	.	.	930 67
Mendon,	.	.	.	.	.	1,110 58
Middlefield (two contracts),	.	.	.	.	.	874 69
Millis,	.	.	.	.	.	1,132 79
Monterey,	.	.	.	.	.	277 64
Montgomery,	.	.	.	.	.	235 44
Mount Washington (two contracts),	.	.	.	.	.	694 11
New Marlborough,	.	.	.	.	.	998 06
New Salem,	.	.	.	.	.	1,448 20
Norton,	.	.	.	.	.	1,110 59
Otis,	.	.	.	.	.	97 92
Oxford,	.	.	.	.	.	888 46
Pelham,	.	.	.	.	.	997 30
Peru,	.	.	.	.	.	346 50
Petersham,	.	.	.	.	.	1,665 88
Plymouth,	.	.	.	.	.	489 69
Prescott,	.	.	.	.	.	666 35
Rowe,	.	.	.	.	.	610 82
Savoy,	.	.	.	.	.	94 02
Sheffield,	.	.	.	.	.	1,110 54
Sherborn,	.	.	.	.	.	666 35
Shutesbury,	.	.	.	.	.	666 35
Warwick,	.	.	.	.	.	1,658 11
Washington,	.	.	.	.	.	666 35
Wendell (two contracts),	.	.	.	.	.	1,443 77
						<hr/>
						\$50,215 12

GENERAL EXPENSES, DEC. 1, 1908, TO NOV. 30, 1909.

[Under Chapter 212, Acts of 1908.]

Travel of commissioners,	.	.	.	.	.	\$5 25
Office and typewriter supplies,	.	.	.	.	.	2 00
Telephone, including tolls,	.	.	.	.	.	37 63
Repairs to steam road rollers,	.	.	.	.	.	5 65

						\$50 53
--	--	--	--	--	--	---------

[Under Chapter 127, Acts of 1909.]

Salaries of commissioners,	. . . . .	\$8,375 01
Travel of commissioners,	. . . . .	2,897 23
Salaries of clerical assistants and first and second engineers,	. . . . .	16,278 33
Rent of offices,	. . . . .	4,750 00
Printing and binding annual report,	. . . . .	1,013 81
Printing, including postal cards and envelopes,	. . . . .	896 06
Office and typewriter supplies,	. . . . .	594 64
Telephone, including tolls,	. . . . .	471 65
Postage,	. . . . .	1,425 06
Recording land takings and easements,	. . . . .	169 46
Advertising hearings,	. . . . .	52 31
Typewriter,	. . . . .	81 00
Repairs to steam road rollers,	. . . . .	3,649 73
Miscellaneous items, including express charges, car fares, telegrams and other minor office expenses,	. . . . .	654 52
		<hr/>
		\$41,308 81

MOTOR VEHICLE FEES FUND.

[Under Chapter 580, Acts of 1907, and Chapter 642, Acts of 1908.]

Salaries of clerks and clerical assistants,	. . . . .	\$19,778 12
Number of plates for registering automobiles,	. . . . .	7,626 50
Badges for professional chauffeurs,	. . . . .	949 30
Office and typewriter supplies,	. . . . .	750 31
Printing, including postal cards and envelopes,	. . . . .	5,385 38
Speed signs and sign boards,	. . . . .	359 80
Rent of offices,	. . . . .	2,040 00
Cartage and storage of number plates,	. . . . .	182 70
One multigraph,	. . . . .	314 58
Examination of professional chauffeurs, including salaries, ex- penses and mileage purchased,	. . . . .	9,857 48
Miscellaneous items, including express charges, telegrams, car fares, due stamps and other minor office expenses,	. . . . .	351 99
		<hr/>
		\$47,596 16

EXPENSES CONNECTED WITH TELEPHONE AND TELEGRAPH SUPERVISION.

[Under Chapter 9, Acts of 1909.]

Salaries of commissioners,	. . . . .	\$4,425 01
Salaries of clerical assistants,	. . . . .	2,012 79
Printing,	. . . . .	992 15
Miscellaneous items,	. . . . .	103 42
		<hr/>
		\$7,533 37

[Under Chapter 632, Acts of 1908, and Chapter 78, Resolves of 1909.]

Expenses in connection with an inventory and appraisal of the
New England Telephone and Telegraph Company, . . . \$19,127 25

MISCELLANEOUS EXPENDITURES.

[Under Chapter 574, Acts of 1907.]

Expenditures for the laying out and construction, as a State
highway, of Washington Street in the West Roxbury dis-
trict of the city of Boston, \$40,529 76

[Under Chapter 616, Acts of 1908.]

Expenditures for certain State highways in the county of
Berkshire, town of Becket, \$39,584 73

[Under Chapter 511, Acts of 1909.]

Expenditures for the improvement of a highway in the county
of Berkshire, towns of Becket and Lee, \$15,210 58

[Under Chapter 136, Resolves of 1909.]

Expenditures for the repair of the bridge over Parker River
in the town of Newbury, and for an examination of certain
other large bridges, \$1,992 38

SUMMARY OF EXPENDITURES.

✓ For construction,	\$351,700 47
For road repair and maintenance, from revenue,	✓ 247,984 59
For road repair and maintenance (motor vehicle fees fund),	✓ 154,131 01
✓ For construction, under "small town" acts,	50,215 12
For general expenses, under chapter 212, Acts of 1908,	50 53
For general expenses, under chapter 127, Acts of 1909,	41,308 81
For expenditures connected with automobile registration,	47,596 16
For telephone and telegraph supervision, under chapter 9, Acts of 1909,	7,533 37
For expenditures under chapter 632, Acts of 1908, and chapter 78, Resolves of 1909,	19,127 25
For expenditures under chapter 574, Acts of 1907,	40,529 76
For expenditures under chapter 616, Acts of 1908,	39,584 73
For expenditures under chapter 511, Acts of 1909,	15,210 58
For expenditures under chapter 136, Resolves of 1909,	1,992 38
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	\$1,016,964 76

HAROLD PARKER,

WM. D. SOHIER,

F. D. KEMP,

Massachusetts Highway Commission.

APPENDIX A.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, TO DEC. 1, 1909.

TOWN OR CITY.	YEAR.	ROAD LAID OUT.				Length constructed (Miles).
		From —		Direction.	To —	
Abington,	1900-1-3,	.	.	Easterly,	.	. 1.73
Abington,	1905-7,	.	.	Easterly,	.	. 1.64
Acton, ¹	1899-1900-1-2,	.	.	Northwesterly,	.	. 3.71
Acton (west), ²	1901-7,	.	.	Southeasterly,	.	. 1.67
Acushnet,	1901-3,	.	.	Westerly and northerly,	.	. 2.80
Acushnet,	1897,	.	.	Northerly,	.	. .61
Adams (Maple Grove),	1897,	.	.	Northerly,	.	. .57
Adams (Orchard Street),	1908,	.	.	Northerly,	.	. 1.46
Agawam,	1903-4-6-7,	.	.	Southwesterly,	.	. 2.22
Agawam,	1909,	.	.	Southerly end of 1907 section,	.	. .88
Amesbury,	1899-1901-3-4,	.	.	Merrimac line,	.	. 2.24
Amesbury,	1906-7,	.	.	Salisbury line,	.	. .77
Amherst,	1901-4,	.	.	Hadley line,	.	. .97

¹ Exclusive of 1,100 feet at railroad crossing.² Exclusive of 970 feet at railroad crossing.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	Year.	ROAD LAID OUT.		Length constructed (Miles.)
		From —	Direction.	
Andover,	1895-6,	• • •	• • •	1.22
Andover,	1897-9-1900-2-3,	• • •	• • •	2.98
Ashby,	1894-5-6-7-8-9,	• • •	• • •	3.58
Ashfield,	1897-8,	• • •	• • •	1.61
Ashland,	1903,	• • •	• • •	1.47
Athol,	1895-6,	• • •	• • •	1.61
Athol,	1902-3,	• • •	• • •	1.49
Attleborough,	1901-1-3,	• • •	• • •	2.66
Attleborough,	1909,	• • •	• • •	.74
Auburn,	1895-6-7-8-9-1901-3-4,	• • •	• • •	5.26
Barnstable (north),	1899-1902-7,	• • •	• • •	2.68
Barnstable (north),	1909,	• • •	• • •	1.91
Barnstable (south),	1897-1901,	• • •	• • •	2.26
Barnstable (west),	1904,	• • •	• • •	1.48
Barre,	1897-9,	• • •	• • •	2.89
Becket,	1902-4-5-6,	• • •	• • •	2.05
Becket,	1908,	• • •	• • •	3.53
Bedford,	1897-1902,	• • •	• • •	1.07
Bedford,	1903-6,	• • •	• • •	.57

Belchertown,	.	1900-1-2-7-8,	.	.	Near depot,	.	.	.	.	.	.	.	Westerly,	.	.	.	2.35
Bellingham,	.	1902-5,	.	.	From Blackstone line,	.	.	.	.	.	.	.	Northeasterly,	.	.	.	.55
Bellingham,	.	1904-5-6,	.	.	Franklin line to Mendon line,	.	.	.	.	.	.	.	Westerly,	.	.	.	2.63
Berkeley,	.	1906,	.	.	Lakeville line,	.	.	.	.	.	.	.	Northwesterly,	.	.	.	.77
Beverly,	.	1895-7-8,	.	.	Wenham line,	.	.	.	.	.	.	.	Southerly,	.	.	.	2.01
Beverly,	.	1905-6,	.	.	Manchester line,	.	.	.	.	.	.	.	Southwesterly,	.	.	.	3.67
Billerica,	.	1908,	.	.	A point near the Common,	.	.	.	.	.	.	.	Southeastery,	.	.	.	.58
Blackstone,	.	1899-1900-2,	.	.	Uxbridge line,	.	.	.	.	.	.	.	Southeastery,	.	.	.	1.74
Blackstone,	.	1909,	.	.	Southerly end of 1902 lay-out,	.	.	.	.	.	.	.	Southeastery,	.	.	.	.81
Blackstone,	.	1905,	.	.	Bellingham line to Woonsocket line,	.	.	.	.	.	.	.	Southwesterly,	.	.	.	.06
Boston,	.	1908,	.	.	Lagrange Street to Dedham line,	.	.	.	.	.	.	.	Southwesterly,	.	.	.	1.40
Bourne,	.	1897-8-1904,	.	.	Cohasset Narrows,	.	.	.	.	.	.	.	Easterly,	.	.	.	2.09
Bourne, ¹	.	1903-5-7,	.	.	Back River bridge,	.	.	.	.	.	.	.	Southerly,	.	.	.	2.42
Boxborough,	.	1897-9-1905-7,	.	.	Acton line,	.	.	.	.	.	.	.	Westerly,	.	.	.	3.31
Braintree,	.	1900-2,	.	.	Quincy line,	.	.	.	.	.	.	.	Southeastery,	.	.	.	1.06
Brewster,	.	1895-6-7-1901,	.	.	Dennis line to Orleans line,	.	.	.	.	.	.	.	Easterly,	.	.	.	7.79
Brewster,	.	1908,	.	.	Orleans line to Chatham line,	.	.	.	.	.	.	.	Southerly,	.	.	.	.04
Bridgewater,	.	1904-5-6-7-8,	.	.	Near Middleborough line,	.	.	.	.	.	.	.	Northerly and northwesterly,	.	.	.	3.47
Brimfield,	.	1897-9,	.	.	Monson line,	.	.	.	.	.	.	.	Southerly,	.	.	.	2.34
Brimfield,	.	1901-2,	.	.	Wales line,	.	.	.	.	.	.	.	Northerly,	.	.	.	1.63
Brockton,	.	1897-8-9,	.	.	Easton line,	.	.	.	.	.	.	.	Easterly,	.	.	.	1.87
Brockton,	.	1900,	.	.	Abington line,	.	.	.	.	.	.	.	Westerly,	.	.	.	.66

¹ Exclusive of 275 feet at railroad.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	YEAR.	ROAD LAID OUT.				Length constructed (Miles).
		From —	Direction.		Length (Miles).	
Brockton,	1904,	West Bridgewater line,	.	.	.	.66
Brookfield,	1902-3,	West Brookfield line,	.	.	.	.87
Brookfield,	1905-7,	Spencer line,	.	.	.	.77
Brookfield,	1897-8-1900-4,	Brookfield village,	.	.	.	2.24
Buckland,	1894-5-6-7-8-9-1900-3-7,	Shelburne Falls station,	.	.	.	4.29
Burlington,	1903-4-5-6,	Woburn line to Billerica line,	.	.	.	3.80
Canton,	1905-6-7-8,	Stoughton line,	.	.	.	3.23
Charlemont,	1897-8-9,	Deerfield River bridge,	.	.	.	.77
Charlton,	1901-2,	Charlton Depot to Charlton City,	.	.	.	1.91
Charlton,	1905-6,	Near Charlton City,	.	.	.	.84
Charlton,	1909,	Near Charlton City,	.	.	.	.29
Charlton,	1907,	Oxford line,	.	.	.	.46
Chatham,	1899-1901-2-5-6,	Depot Street to Harwich line,	.	.	.	4.03
Chatham,	1907,	Depot to Wading Place bridge, Harwich line,	.	.	.	3.13
Chelmsford, ¹	1898-9-1901-7,	Lowell line to North Chelmsford,	.	.	.	1.97
Chelmsford,	1903-4,	Lowell line toward Chelmsford Center,	.	.	.	1.27
Chelmsford,	1908,	Near Chelmsford village,	.	.	.	.98
Chelsea,	1901-4,	Lewis Street,	.	.	.	.96
Cheshire,	1898-1900-1-2,	Farnum's station, Boston & Albany Railroad,	.	.	.	2.60

Chester,	.	.	1899-1900-1-2-4-5,	.	Becket line,	.	.	.	Easterly,	.	.	.	3.25
Chester,	.	.	1909,	.	Easterly end of 1905 section,	.	.	.	Easterly,	.	.	.	1.22
Chicopee,	.	.	1897-8-9,	.	Springfield line,	.	.	.	Northerly,	.	.	.	.92
Chicopee,	.	.	1902-3-4-5-6-7,	.	Near Chicopee River bridge,	.	.	.	Northerly,	.	.	.	2.98
Chilmark,	.	.	1905-6-8,	.	Beetlebung Corner,	.	.	.	Northeasterly and southwesterly,	.	.	.	3.61
Chilmark,	.	.	1909,	.	Easterly end of 1908 section,	.	.	.	Northeasterly,	.	.	.	.25
Clarksburg,	.	.	1905-7,	.	North Adams line,	.	.	.	Northeasterly and northerly,	.	.	.	.97
Clarksburg,	.	.	1909,	.	Red Mill bridge,	.	.	.	Northerly,	.	.	.	.11
Cohasset,	.	.	1897-8-1900,	.	Near Hingham line,	.	.	.	Easterly,	.	.	.	1.73
Cohasset,	.	.	1902-03,	.	Beechwood Street to Scituate line,	.	.	.	Southerly,	.	.	.	.55
Colrain, ²	.	.	1898-1901-5,	.	Shelburne line,	.	.	.	Northerly,	.	.	.	2.13
Concord,	.	.	1897-8,	.	Lincoln line,	.	.	.	Northwesterly,	.	.	.	1.47
Concord,	.	.	1900-5-6,	.	Acton line,	.	.	.	Southeasterly,	.	.	.	2.13
Dalton,	.	.	1895-6-1903-4,	.	Pittsfield line,	.	.	.	Easterly,	.	.	.	2.55
Dartmouth,	.	.	1898-9-1900-1-3-5,	.	Near Westport line to New Bedford line,	.	.	.	Easterly,	.	.	.	4.53
Deerfield,	.	.	1894-5,	.	South Deerfield station to Sunderland bridge,	.	.	.	Southeasterly,	.	.	.	1.53
Deerfield,	.	.	1900-1-2-3,	.	Cheapside bridge,	.	.	.	Southerly,	.	.	.	1.43
Deerfield,	.	.	1904-5-6-7-8,	.	South Deerfield village,	.	.	.	Northerly,	.	.	.	2.48
Deerfield,	.	.	1909,	.	Northerly end of 1908 section,	.	.	.	Northerly,	.	.	.	.60
Dennis (north),	.	.	1895-6-7-8,	.	Yarmouth line to Brewster line,	.	.	.	Northwesterly,	.	.	.	4.27
Dennis (south),	.	.	1900-1-2-4-6,	.	Bass River bridge to Harwich line,	.	.	.	Easterly,	.	.	.	3.22
Dighton (north),	.	.	1902-3,	.	Taunton line to Rehoboth line,	.	.	.	Southwesterly,	.	.	.	1.56

¹ Exclusive of 900 feet at railroad crossing.² Exclusive of 2,000 feet at North River bridge.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROAD Laid Out.				Length con- structed. (Miles).
		From —	—	—	Direction.	
Dighton (south),	1905-6-8,	Three Mile River bridge,	—	—	Southwesterly,	1.22
Dighton,	1909,	Near Somerset line,	—	—	Northerly,	.79
Douglas,	1902-4,	Sutton line at Manchaug,	—	—	Southeasterly,	1.60
Douglas,	1905,	Main Street,	—	—	Southeasterly,	.54
Dover,	1905-7,	Charles River bridge,	—	—	Westerly,	2.18
Draenut,	1905-6-7,	Near Lowell line on Methuen road,	—	—	Northeasterly,	1.83
Dudley,	1902-4-6-7,	1,400 feet from Webster line,	—	—	Westerly and southwesterly,	2.20
Duxbury,	1894-5-7-9-1903-5-8,	Marsfield line,	—	—	Southerly and southwesterly,	4.47
Duxbury,	1909,	Southerly end of 1908 section to Kingston line,	—	—	Southerly,	4.47
Eastham,	1903,	Wellfleet line,	—	—	Southerly,	.69
Eastham,	1904-5-6,	Orleans line,	—	—	Northerly,	.78
Eastham,	1909,	Connecting previous lay-outs,	—	—	Southwesterly,	2.60
Easthampton,	1895-6,	Northampton line,	—	—	Southerly,	3.08
Easthampton,	1900-1,	Clark Street to foot of Mount Tom,	—	—	Northwesterly,	1.00
East Longmeadow,	1904-6,	East Longmeadow village,	—	—	Southwesterly,	1.32
Easton,	1900,	Brockton line,	—	—	Southerly,	1.10
Edgartown,	1897-9-1900-1-2-3,	Oak Bluffs line,	—	—	Northwesterly,	1.05
Irving,	1898-9-1900,	Town hall to Orange line,	—	—	Southwesterly,	.80
Irving,	1907,	Millers Falls,	—	—	Easterly,	.42
					Easterly,	2.04
					Easterly,	67

¹ Exclusive of 132 feet at railroad crossing.

² Exclusive of 100 feet at railroad crossing.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROAD LAID OUT.		Direction.	Length (Miles).	Length constructed (Miles).
		From —	To —			
Great Barrington,	1894-6-7-1902,	•	Housatonic River bridge,	Easterly,	•	3.41
Greenfield, ¹	1899-1900-2,	•	Washington Street,	Easterly,	•	1.33
Greenfield,	1903-6-7-8,	•	Silver Street,	Northeasterly,	•	1.92
Greenfield,	1905,	•	One mile from town section on Colrain road,	Northwesterly,	•	.26
Groton,	1901-2-7,	•	Pepperell line,	Southeastly and southerly,	•	1.41
Groveland,	1900-1-2-5,	•	Merrimac River bridge to West Newbury line,	Northeasterly,	•	1.73
Hadley,	1894-1901,	•	Connecticut River to Amherst line,	Easterly,	•	4.69
Hamilton,	1899-1900,	•	Ipswich line,	Southwesterly,	•	.44
Hamilton,	1909,	•	Wenham line,	Northeasterly,	•	.71
Hancock,	1895-6-8-9,	•	Pittsfield line to New York line,	Westerly,	•	3.23
Hanover,	1906-8,	•	Pembroke line,	Northwesterly,	•	1.85
Hardwick,	1897-1901,	•	New Braintree line,	Northerly,	•	.82
Harvard,	1900-1905,	•	Woodchuck Hill to Harvard Common,	Westerly,	•	1.58
Harwich,	1899-1900-1-2-3,	•	Dennis line to Chatham line,	Easterly,	•	5.10
Harwich,	1908,	•	Chatham line to Brewster line,	Northerly,	•	1.38
Hatfield,	1901-6-8,	•	Northampton line,	Northerly,	•	1.17
Hatfield,	1909,	•	Northerly end 1908 section,	Northerly,	•	.84
Haverhill,	1899,	•	River and Maxwell streets to Methuen line,	Westerly,	•	2.63
Haverhill,	1902-7,	•	Kenoza road,	Northeasterly and easterly,	•	1.93

Hingham,	1894,	Weymouth Back River,	Easterly,	. . . . .	1.42
Hingham,	1896-7,	Near Cohasset line,	Westerly,	. . . . .	1.23
Hinsdale,	1901-2-3,	Dalton line,	Southeasterly,	. . . . .	1.02
Holbrook,	1894-6-1902,	Weymouth line,	Northwesterly,	. . . . .	1.75
Holden,	1894-5-6-7,	Jefferson village,	Southeasterly,	. . . . .	2.70
Holden,	1898-1900-1908,	Worcester line,	Northerly,	. . . . .	1.51
Holden,	1905,	Rutland line,	Easterly,	. . . . .	.52
Holliston,	1906-7,	Milford line,	Northeasterly,	. . . . .	1.46
Hudson,	1906-7,	Brigham Street via Washington Street to Marlborough line.	Southerly,	. . . . .	1.16
Huntington,	1895-6,	Russell line,	Westerly,	. . . . .	1.01
Huntington,	1903-6,	Near railroad crossing,	Northwesterly,	. . . . .	.99
Huntington,	1909,	Northwesterly end of 1906 section,	Northwesterly,	. . . . .	.26
Ipswich,	1907-8,	Ipswich Common,	Southerly,	. . . . .	1.34
Ipswich,	1909,	Southerly end of 1908 lay-out,	Southerly,	. . . . .	.80
Kingston,	1905-6,	Duxbury line,	Southerly,	. . . . .	1.02
Lakeville,	1901-2,	One half mile from Middleborough line,	Southwesterly,	. . . . .	3.57
Lancaster,	1902,	Clinton line to Sterling line,	Northerly,	. . . . .	1.25
Lawrence,	1896,	Methuen line,	Southerly,	. . . . .	.27
Lee,	1894-5-6-1908,	Lee Park to Strickland House,	Easterly,	. . . . .	2.44
Lee,	1909,	Easterly end of 1908 lay-out,	Easterly,	. . . . .	.42
Lee,	1900,	Lenox line to Lee village,	Southerly,	. . . . .	1.26
Lee,	1906,	Lenox line, Stockbridge Street.	Southerly,	. . . . .	1.02

¹ Exclusive of 500 feet at Cheapside bridge and 1,100 feet at railroad crossing.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	Year.	ROAD LAID OUT.			Length constructed (Miles).
		From —	Direction.	Length (Miles).	
Lee (south), .	1906, .	Stockbridge line, Main Street,	Easterly, .	.90	.90
Leicester, ¹ .	1894-5-6-8-9,	Worcester line to Spencer line,	Westerly, .	4.87	4.87
Lenox, .	1899-1900-1, .	Lee line to Lenox village,	Northerly, .	2.28	2.28
Lenox, .	1904-5, .	Lenox village to Pittsfield line,	Northerly, .	3.18	3.18
Lenox, .	1906, .	Lee line via Kemble Street, .	Northerly, .	2.20	2.20
Leominster, .	1901-2, .	Sterling line, .	Northerly, .	2.18	2.18
Lexington, .	1895-6-7-8, .	Massachusetts Avenue, .	Westerly, .	3.45	3.45
Lexington, .	1900, .	Bedford line, .	Southeasterly, .	.85	.85
Lincoln, .	1895-6-7,	Concord line to Lexington line,	Southeasterly, .	2.06	2.06
Littleton, .	1902-3-4, .	Aeton line via Great road, .	Northerly, .	2.13	2.13
Littleton, .	1908, .	Northerly end of 1904 section, .	Northerly, .	.52	.52
Littleton, .	1902, .	Westford line to Great road, .	Southwesterly, .	.32	.32
Lowell (Boulevard), .	1897, .	Tyngsborough line, .	Easterly, .	.97	.97
Lowell (Princeton Street), .	1897-8, .	Chelmsford line, .	Easterly, .	1.34	1.34
Lunenburg, .	1898-9-1900-1-3,	Fitchburg line, .	Easterly, .	2.72	2.72
Lynn, .	1899, .	Saugus River to Sea Street, .	Northeasterly, .	.90	.90
Mansfield, .	1901, .	Foxborough line, .	Southeasterly, .	.72	.72
Mansfield, .	1906, .	Norton line, .	Northerly, .	.49	.49
Marion, .	1894-5-1901, .	Marion village to Wareham line, .	Northeasterly, .	1.59	1.59

Marion,	.	.	1897-9-1901-2,	.	.	.	.	Westerly,	.	.	1.84
Marion,	.	.	1903,	.	.	.	.	Northwesterly,	.	.	2.14
Marlborough (east),	.	.	1897-1902-3-4,	.	.	.	.	Marion village to Rochester line,	.	.	2.14
Marlborough (west),	.	.	1897-9-1900-1,	.	.	.	.	Sudbury line to Hosmer Street,	.	.	3.10
Marlborough,	.	.	1908,	.	.	.	.	Northborough line,	.	.	2.41
Marshfield,	.	.	1894-6-8-9-1901-2-4-7,	.	.	.	.	Hudson line,	.	.	2.41
Marshfield,	.	.	1909,	.	.	.	.	Duxbury line,	.	.	.81
Mattapoisett,	.	.	1894-5,	.	.	.	.	Near North River bridge,	.	.	4.60
Mattapoisett,	.	.	1900-1-3,	.	.	.	.	Fairhaven line,	.	.	4.60
Medford,	.	.	1907,	.	.	.	.	Marion line to Ned Point Light road,	.	.	.74
Melrose,	.	.	1906,	.	.	.	.	Somerville line via Mystic Avenue,	.	.	.74
Merrimac,	.	.	1897-8-9,	.	.	.	.	Saugus line at Upham Street,	.	.	1.16
Merrimac,	.	.	1901-3,	.	.	.	.	Near Haverhill line,	.	.	1.16
Methuen,	.	.	1896-1900-1-2-6-7-8,	.	.	.	.	Amesbury line,	.	.	2.05
Middleborough,	.	.	1891-5-6-7-8-1902-3,	.	.	.	.	Lawrence line to Haverhill line,	.	.	.86
Middleborough,	.	.	1906-7-8,	.	.	.	.	Nemasket River to Rochester line,	.	.	.86
Milford,	.	.	1904-5,	.	.	.	.	Bridgewater line to railroad bridge on Everett Street,	.	.	.39
Milford,	.	.	1909,	.	.	.	.	Highland Avenue via West Street to Hopedale line,	.	.	.39
Milbury,	.	.	1902,	.	.	.	.	Holliston line,	.	.	.92
Milbury,	.	.	1900-3-4,	.	.	.	.	Worcester line to Grafton line,	.	.	.92
Milbury,	.	.	1906,	.	.	.	.	Worcester line,	.	.	1.20
Milton,	.	.	1893-1900,	.	.	.	.	Sutton line,	.	.	1.20
								Neponset River at Granite bridge,	.	.	1.61
								Southeastly,	.	.	.59
								Southeastly,	.	.	.59
								Southeastly,	.	.	.87

⁴ Exclusive of portion through Leicester Center,

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—*Continued.*

TOWN OR CITY.	Year.	ROAD LAID OUT.		Direction.	Length constructed (Miles).
		From —	To —		
Monson,	1894,	.	Railroad bridge toward Palmer,	Northerly,	.93
Monson,	1901-5,	.	Palmer line to Brimfield line,	Southeastly,	.39
Monson,	1908,	.	Palmer line,	Easterly and westerly,	.29
Montague,	1898-9-1904-6,	.	Third Street near L Street, Turners Falls,	Easterly,	3.23
Montague,	1905,	.	Connecticut River bridge to Greenfield,	Northeastly,	1.07
Montague,	1909,	.	Northerly end of 1905 section,	Northeastly,	.60
Nantucket,	1894-5-6-7-9-1900-1-3,	.	First mile stone to Siasconset,	Easterly,	6.48
Natick,	1901,	.	Wellesley line to Union Square,	Westerly,	1.14
Natick,	1903,	.	Sherborn line to Cemetery Street,	Easterly,	2.06
Needham,	1901,	.	Newton line,	Westerly,	1.00
Needham,	1905,	.	Charles River bridge, Chestnut Street,	Northerly,	1.04
New Braintree,	1897,	.	Hardwick line to Ware line,	Southely,	.17
New Braintree,	1903,	.	New Braintree village,	Northerly,	.22
Newbury,	1899-1900-1-2-4-5-6,	.	Newburyport line via Oldtown to Rowley line,	Southely and southwesterly,	4.23
Newburyport,	1896-7-8,	.	West Newbury line,	Easterly,	1.75
Newton,	1901,	.	Needham line,	Easterly,	1.03
Norfolk,	1895,	.	Norfolk line to Wrentham line,	Southwesterly,	1.45
North Adams,	1894-6-7,	.	Williamstown line,	Easterly,	1.60
North Adams,	1900-1-2-3,	.	Boston & Maine Railroad bridge to Adams line,	Southely,	2.32

¹ Exclusive of 1,200 feet at railroad crossing.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—*Continued.*

TOWN OR CITY.	Year.	From —		ROAD LAID OUT.		Length constructed (Miles.)
		From —	Direction.	From —	Length (Miles.)	
Orcans,	1900-1-4,	Brewster line to Eastham line,	Northeasterly,	—	1.98	
Orcans, ¹	1903-4-5,	One and one half miles from Shattock's corner to Brewster line,	Southeastery and southerly,	—	2.72	
Oxford,	1906-7,	Auburn line,	Southwesterly,	—	.85	.85
Oxford, ²	1908,	Charlton line,	Easterly,	—	.63	.63
Oxford,	1909,	Easterly end of 1908 section,	Northeasterly,	—	.72	.72
Palmer,	1899-1900-1,	Tenneyville to Monson line,	Southeastery,	—	2.52	2.52
Palmer,	1905-8,	Near Quabaoag River bridge to Warren line,	Easterly,	—	1.73	1.73
Palmer, ³	1906-8,	Wilbraham line,	Easterly,	—	5.29	5.29
Palmer,	1909,	Easterly end of 1908 section (west),	Easterly,	—	.38	—
Paxton,	1895-6-7-8-1902,	Worcester line,	Northwesterly,	—	3.60	3.60
Pembroke,	1905,	North River bridge at Jauover line,	Southwesterly,	—	.35	.35
Popperell,	1907,	At Nashua River bridge,	Northwesterly,	—	.05	—
Phillipston,	1897-8-1902-4,	Athol line,	Easterly,	—	1.95	1.95
Phillipston,	1909,	End of old section to Templeton line,	Northeasterly,	—	.83	.60
Pittsfield,	1894-8-1901-2,	Hancock line,	Easterly,	—	2.38	2.38
Pittsfield,	1909,	Woodleigh Avenue,	Westerly,	—	.67	.50
Pittsfield,	1897-1906-7,	Dalton line,	Southwesterly,	—	2.46	2.46
Pittsfield,	1904-5,	South Mountain road to Lenox line,	Southerly,	—	1.58	1.58
Plainville,	1894-5,	North Athelborough line to Wrentham line,	Northerly,	—	1.81	1.81

Plymouth,	.	.	1894-5-6-7-8-1902-4,	.	Manomet village,	.	.	.	.	Northerly,	.	.	.	.	5.05
Plymouth,	.	.	1907,	.	Manomet village,	.	.	.	.	Southerly,	.	.	.	.	.88
Princeton,	.	.	1897-1900-2-3,	.	Princeton depot,	.	.	.	.	Easterly,	.	.	.	.	2.23
Provincetown,	.	.	1901-3,	.	Truro line to Allerton Street,	.	.	.	.	Westerly,	.	.	.	.	2.23
Quiney,	.	.	1899,	.	Chubbsuck Street to Fore River bridge,	.	.	.	.	Southeastly,	.	.	.	.	.49
Quincey,	.	.	1902,	.	Braintree line,	.	.	.	.	Northerly,	.	.	.	.	.57
Quincey,	.	.	1900,	.	Westerly end of 1902 section,	.	.	.	.	Northwesterly,	.	.	.	.	.53
Quiney,	.	.	1904,	.	Randolph line to Milton line,	.	.	.	.	Northerly,	.	.	.	.	-.³
Randolph,	.	.	1902-3,	.	Quincy line,	.	.	.	.	Southeastly,	.	.	.	.	1.23
Randolph,	.	.	1909,	.	End of 1903 section,	.	.	.	.	Southeastly,	.	.	.	.	1.38
Raynham,	.	.	1901-2-3,	.	Taunton line to Raynham village,	.	.	.	.	Northeastly,	.	.	.	.	.52
Reading,	.	.	1899-1900,	.	Stoneham line,	.	.	.	.	Northerly,	.	.	.	.	.52
Reading,	.	.	1902-3,	.	North Reading line,	.	.	.	.	Southerly,	.	.	.	.	1.48
Rehoboth,	.	.	1895-6-9-1903-5-6-7-8,	.	Seekonk line,	.	.	.	.	Easterly,	.	.	.	.	1.48
Revere,	.	.	1897-8,	.	Boston line,	.	.	.	.	Northeastly,	.	.	.	.	1.07
Revere,	.	.	1899,	.	Saugus line,	.	.	.	.	Southwesterly,	.	.	.	.	2.67
Richmond,	.	.	1897-8-9-1901-2-3-4-5-6-7,	.	Boston & Albany Railroad station to Pittsfield line.	.	.	.	.	Northerly,	.	.	.	.	2.67
Rockester,	.	.	1903,	.	Marion line to Aeusinet line,	.	.	.	.	Westerly,	.	.	.	.	.58
Rockester,	.	.	1909,	.	Middleborough line to Wareham line,	.	.	.	.	Southeastly,	.	.	.	.	.67
Rockland,	.	.	1902-5-6,	.	Abington line to Hanover line,	.	.	.	.	Easterly,	.	.	.	.	.67
Rockport,	.	.	1902-6,	.	Gloster line,	.	.	.	.	Northerly,	.	.	.	.	.94
Rowley,	.	.	1905-7,	.	Newbury line,	.	.	.	.	Southwesterly,	.	.	.	.	.94
															1.21

¹ Exclusive of 100 feet at bridge.² Exclusive of 100 feet between stations 126+50 and 127+50.³ Exclusive of 1,500 feet in Monson.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	Year.	ROAD LAID OUT.			Length constructed (Miles.)
		From —	Direction.	Length (Miles).	
Rowley,	1908-9,	.	.	.	1.68
Russell,	1894-5-6-7-8-9,	.	.	.	6.66
Rutland,	1904,	Holden line,	Northeasterly,	1.16	1.16
Salem,	1901,	Swampscott line,	Northwesterly,	.13	.13
Salem,	1908,	End of 1901 section,	Northerly,	.13	.13
Salisbury,	1904-5,	Town Creek,	Northwesterly,	1.27	1.27
Sandwich,	1897-8-1900-2,	Barnstable line,	Northwesterly and southerly,	1.45	1.45
Saugus,	1899,	Fox Hill bridge to Revere line,	Westerly,	2.83	2.83
Saugus,	1906,	Melrose line,	Southerly,	1.60	1.60
Scituate,	1894-5-1900-3-6-8,	Cohasset line,	Southerly,	.19	.19
Scituate,	1909,	End of 1908 section,	Southerly,	.417	4.17
Seekonk,	1900-1-2-4,	Rehoboth line to Rhode Island line,	Westerly,	.51	.51
Sharon,	1908,	Foxborough line,	Northeasterly,	2.76	2.76
Shelburne,	1894-5-6,	Bridge Street to Colrain line,	Northeasterly,	.64	.64
Shrewsbury,	1895-6-7-8-9-1900-4,	Worcester line to Northborough line,	Northeasterly,	2.16	2.16
Somerset,	1895-6-7-9-1900-1-2,	Slade's Ferry bridge,	Northerly,	4.86	4.86
Somerset,	1903-4-9,	Slade's Ferry bridge to Swansea line,	Northwesterly,	4.50	4.50
Somerville,	1909,	Slade's Ferry bridge to Brayton Avenue,	Northerly,	2.40	2.40
Somerville,	1908,	Medford line via Mystic Avenue,	Southeasterly,	.22	.22
					1.16

¹ Exclusive of 178 feet at Seven Mile River.

2 Hassam pavement.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	Year.	ROAD LAID OUT.			Length constructed (Miles).
		From —	Direction.	Length (Miles).	
Stoughton, ¹	1904-5, .	Easton line to Walnut Street,	Northerly, .	. . .	2.14
Sturbridge,	1897-1903-4-7,	Southbridge line, . . .	Northwesterly, .	. . .	1.73
Sturbridge,	1909, .	End of 1904 section, .	Northwesterly, .	. . .	.63
Sudbury,	1897-8-1900-1-2-3,	Marlborough line to Wayland line, .	Easterly, .	. . .	.63
Sunderland,	1897-1903-4-5-7, .	Connecticut River bridge, .	Southeasterly, .	. . .	.5.11
Sunderland,	1909, .	End of 1907 section, .	Southerly, .	. . .	1.39
Sutton,	1899-1901-2, .	Millbury line, . . .	Southerly, .	. . .	.17
Sutton,	1903-4, .	Douglas line at Manehaug, .	Northerly, .	. . .	.46
Swampscott,	1897-1900-1, .	Salem line to Burrell Street, .	Southwesterly, .	. . .	.82
Swansea,	1903-6, .	Somerset line, . . .	Northwesterly, .	. . .	.82
Swansea,	1909, .	End of 1906 section, .	Northwesterly, .	. . .	.89
Swansea,	1903-7, .	Myles River bridge, .	Southeasterly and northwesterly, .	. . .	.89
Taunton,	1895-6-8-9-1900-1,	Dighton line on Winthrop Street, .	Easterly, .	. . .	.93
Taunton,	1905-6, .	Three Mile River bridge, .	Northeasterly, .	. . .	2.94
Taunton,	1907, .	Railroad tracks on County Street, .	Southeasterly, .	. . .	2.94
Templeton,	1899-1901-2-3,	Gardner line at Otter River, .	Westerly, .	. . .	1.07
Templeton,	1905-6-7-8, .	Junction of Main and Maple streets, .	Southwesterly, .	. . .	.66
Templeton,	1909, .	End of 1908 section to Phillipston line, .	Southwesterly, .	. . .	.70
Tewksbury,	1900-1-2-3-4-5-6,	Lowell line to Wilmington line, .	Southeasterly, .	. . .	.6.57

Tisbury,	.	.	Vineyard Haven to West Tisbury line,	.	Southwesterly,	.	.	1.93
Townsend,	.	1894,	Groton line,	.	Northwesterly,	.	.	4.60
Townsend, ²	.	1896-7-8-9-1900-1,	West Townsend village,	.	Westerly,	.	.	.74
Truro,	.	1907,	Wellfleet line via Kelley's Corner,	.	Northerly,	.	.	3.16
Tynsborough,	.	1895-6,	Tyngsborough bridge to Lowell line,	.	Southeastery,	.	.	2.95
Tynsborough,	.	1899,	New Hampshire line,	.	Southerly,	.	.	1.87
Uxbridge,	.	1897-8-1901-3,	Blackstone line,	.	Northwesterly,	.	.	2.18
Uxbridge,	.	1909,	Blackstone River,	.	Northwesterly,	.	.	.58
Wales,	.	1901,	Brimfield line,	.	Southwesterly,	.	.	1.04
Walpole (south),	.	1894-5-7-1900,	Norfolk line,	.	Northerly,	.	.	2.60
Walpole (north),	.	1897-8-1900,	Norwood line,	.	Southerly,	.	.	1.94
Ware,	.	1897-9-1900-3,	New Brantree line,	.	Southerly,	.	.	2.28
Ware,	.	1908,	Junction of Palmer and Belchertown roads,	.	Northeasterly,	.	.	.63
Wareham,	.	1896-1901,	Weewaukt River bridge, Marion line,	.	Northeasterly,	.	.	.71
Wareham,	.	1906-7,	Near High Street on Marion road,	.	Southwesterly,	.	.	1.21
Wareham,	.	1898-1901,	Cohasset Narrows bridge,	.	Westerly,	.	.	1.82
Wareham,	.	1905-6-7-8,	Parker's Mills,	.	Northwesterly and northerly,	.	.	3.66
Wareham,	.	1908,	Near Tremont village,	.	Northerly,	.	.	.21
Wareham,	.	1909,	Rochester line,	.	Southeastery,	.	.	.66
Warren,	.	1896-7-8,	Warren to West Warren,	.	Easterly,	.	.	1.89
Warren,	.	1907-8,	Palmer line,	.	Easterly,	.	.	.79
Warren,	.	1899-1900-1,	Warren to West Brookfield line,	.	Easterly,	.	.	.79

¹ Exclusive of 250 feet at railroad bridge.² Exclusive of 350 feet at Pearl Hill Brook.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Continued.

TOWN OR CITY.	Year.	ROAD LAID OUT.			Length constructed (Miles).
		From —	Direction.	Length (Miles).	
Watertown,	1895-6,	Waltham line,	Easterly,	.85	.85
Watertown, ¹	1897-1900-3,	Weston line to Sudbury line,	Westerly,	2.58	2.58
Webster,	1908,	Junction of Lake Street and Thompson road,	Southeasterly,	.65	.65
Wellesley,	1901,	Natick line to Blossom Street,	Easterly,	1.18	1.18
Wellfleet,	1903-4-5-7,	Eastham line,	Northerly,	4.65	4.65
Wenham,	1897-1901-3,	Beverly line to Hamilton line,	Northerly,	1.76	1.76
Westborough,	1897,	Northborough line,	Southeasterly,	.72	.72
Westborough,	1903-6,	Southborough line,	Southwesterly,	2.28	2.28
West Boylston,	1897-8,	Worcester line,	Northerly,	1.55	1.55
West Bridgewater,	1900-1-2-4,	Brockton line to Bridgewater line,	Southeny,	3.16	3.16
West Brookfield,	1899,	Ware line to Ware line,	Southwesterly,	.15	.15
West Brookfield,	1899-1900-1,	Brookfield line,	Northwesterly,	.51	.51
West Brookfield,	1905,	Warren line,	Easterly,	1.01	1.01
Westfield,	1894-6-8-9,	West Springfield line,	Westerly,	2.22	2.22
Westfield,	1898-9-1900-1-2,	Russell line,	Easterly,	3.59	3.59
Westford,	1902-3,	Littleton line,	Northerly,	3.25	3.25
Westminster,	1894-5-6-7-8-9,	Fitchburg line,	Southwesterly,	3.00	3.00
Westminster,	1903,	Gardner line,	Easterly,	2.25	2.25
West Newbury,	1895-6-7,	Newburyport line,	Westerly,	2.24	2.24

West Newbury,	.	1903-4-5-6,	Groveland line,	.	.	.	.	.	Northeasterly,	.	.	.	.	1.50
West Newbury,	.	1909,	Connecting previous lay-outs,	.	.	.	.	-	-	-	-	-	-	1.37
Weston,	.	1898-9,	Wayland line to near Stony Brook,	.	.	Easterly,	.	.	.	.	.	.	.	3.15
Westport,	.	1894-6-7-8,	Dartmouth line,	.	.	Easterly,	.	.	.	.	.	.	.	4.25
West Springfield,	.	1895-6,	Top of Tatham Hill,	.	.	Easterly,	.	.	.	.	.	.	.	4.25
West Springfield,	.	1905-6,	Top of Tatham Hill,	.	.	Westerly,	.	.	.	.	.	.	.	1.17
West Tisbury,	.	1895-6-7-1904,	Tisbury line to Chilmark line,	.	.	Southwesterly,	.	.	.	.	.	.	.	.76
Westwood,	.	1899-1900,	Norwood line to Dedham line,	.	.	Northerly,	.	.	.	.	.	.	.	1.37
Weymouth,	.	1894,	Holbrook line to Abington line,	.	.	Easterly,	.	.	.	.	.	.	.	.25
Weymouth,	.	1895-6-7,	Fore River to Back River,	.	.	Easterly,	.	.	.	.	.	.	.	1.75
Weymouth,	.	1903-4-7-8,	Broad Street via Washington Street,	.	.	Southerly,	.	.	.	.	.	.	.	1.75
Whately, ²	.	1899-1901-2-3-4-5-6,	Deerfield line to Hatfield line,	.	.	Southerly,	.	.	.	.	.	.	.	.76
Whitman,	.	1894-5-6,	Brookton line,	.	.	Easterly,	.	.	.	.	.	.	.	5.35
Wilbraham, ³	.	1894-5-6-1901-3-4,	Springfield line to Palmer line,	.	.	Easterly,	.	.	.	.	.	.	.	1.05
Williamsburg,	.	1896-8-1901-3,	Goshen line,	.	.	Southeasterly,	.	.	.	.	.	.	.	.25
Williamstown,	.	1907,	River road,	.	.	-	-	-	-	-	-	-	-	.25
Williamstown,	.	1895-6-8-1903,	North Adams line,	.	.	Westerly,	.	.	.	.	.	.	.	.25
Wilmington,	.	1907-8,	Tewksbury line,	.	.	Southeasterly and southerly,	.	.	.	.	.	.	.	1.18
Winchendon,	.	1907,	Glen Allen road via Maple Street,	.	.	Southwesterly,	.	.	.	.	.	.	.	1.35
Winchendon,	.	1907,	Millers River bridge,	.	.	Southwesterly,	.	.	.	.	.	.	.	.35
Winchester,	.	1899-1900,	Arlington line to Woburn line,	.	.	Northeasterly,	.	.	.	.	.	.	.	1.96

¹ Exclusive of 1,500 feet at railroad crossing and Sudbury River.² Exclusive of 375 feet at railroad crossing and 800 feet at railroad bridge.³ Exclusive of 1,763 feet at Wilbraham village.

TABLE SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE COMMISSION, ETC.—Concluded.

TOWN OR CITY.	Year.	ROAD LAID OUT.			Length constructed (Miles).
		From —	—	Direction.	
Windsor,	1897-1902-3,	Cummington line,	•	Westerly,	.98
Windsor,	1906-7,	Peru Street via Main road,	•	Southeastery	.88
Woburn,	1900-1-2,	Winchester line to Burlington line,	•	Northwesterly	2.03
Worcester,	1896-7,	Paxton line,	•	Southeastery	1.35
Worcester,	1897-1903,	Holden line,	•	Southerly,	1.50
Worcester,	1900-5,	West Boylston line,	•	Southwesterly and southerly,	1.22
Wrentham,	1899-1900-1,	Plainville line,	•	Northerly,	2.23
Wrentham,	1897-8-1902,	Norfolk line,	•	Southeastery,	1.86
Yarmouth (north),	1894-5-6,	Barnstable line to Dennis line,	•	Easterly,	3.71
Yarmouth (south),	1895-6-7,	Barnstable line to Bass River bridge,	•	Easterly,	5.09

APPENDIX B.

TABLE SHOWING TOWNS AND CITIES IN WHICH WORK HAS BEEN DONE DURING THE YEAR 1909, AND THE
RESIDENT ENGINEERS ON SUCH WORK, TOGETHER WITH DATES OF BEGINNING AND ENDING.

Town or City.	County.	Lay-out.	Resident Engineer.	Date of Contract.	Date of Beginning, 1909.	Date of Ending, 1909.
Agawam,	Hampden,	1909,	E. S. Bingham,	Aug. 10, 1909,	Sept. 8,	Nov. 20
Andover,	Essex,	Surfacing,	H. C. Poore,	—	July 6,	Sept. 8
Ashby,	Middlesex,	Surfacing,	R. A. Vesper,	May 18, 1909,	June 8,	July 16
Athol,	Worcester,	Bridge,	R. A. Vesper,	Oct. 20, 1909,	Nov. 5,	Dec. 31
Attleborough,	Bristol,	1909,	W. M. Stodder,	May 18, 1909,	June 1,	July 27
Auburn,	Worcester,	Surfacing,	L. T. C. Loring,	June 16, 1909,	July 23,	Sept. 16
Barnstable,	Barnstable,	1909,	W. P. Hammersley,	July 27, 1909,	Sept. 24,	Dec. 31
Becket,	Berkshire,	1909,	G. A. Curtis,	Aug. 17, 1909,	Aug. 19,	Dec. 4
Becket,	Middlesex,	1908,	G. A. Curtis,	Oct. 13, 1908,	April 26,	Oct. 23
Billerica,	Billerica,	1908,	W. N. Chittenden,	Sept. 29, 1908,	June 10,	June 21
Boston,	Suffolk,	1908,	P. H. Everett,	Sept. 29, 1908,	April 13,	June 4
Boston,	Suffolk,	1908,	E. M. Stevens,	May 12, 1908,	May 18,	June 21
Boston,	Suffolk,	1908,	E. J. Nichols,	May 12, 1908,	May 18,	June 21
Bourne,	Barnstable,	Surfacing,	G. N. Willis,	May 12, 1908,	May 18,	June 21
Brewster,	Barnstable,	Surfacing,	W. P. Hammersley,	—	Aug. 26,	Sept. 18
Canton,	Norfolk,	Surfacing,	W. P. Hammersley,	Aug. 25, 1908,	Aug. 1,	Feb. 9
Canton,	Norfolk,	Surfacing,	C. S. Tinkham,	—	—	Aug. 23,
Charlton,	Worcester,	1909,	H. C. Holden,	—	—	Oct. 14
Chester,	Hampden,	1909,	L. T. C. Loring,	Aug. 17, 1909,	Aug. 15,	Oct. 14
Chester,	Hampden,	1909,	C. H. Lovejoy,	June 29, 1909,	Nov. 1,	Dec. 24
			J. F. Haley,	June 29, 1909,	July 13,	Oct. 5

HIGHWAY COMMISSION.

[Pub. Doc.]

TABLE SHOWING TOWNS AND CITIES IN WHICH WORK HAS BEEN DONE, ETC.—Continued.

TOWN OR CITY.	County.	Lay-out.	Resident Engineer.	Date of Contract.	Date of Beginning, 1909.	Date of Ending, 1909.
Chilmark,			A. J. C. Rayner,	Oct. 27, 1909,	Nov. 11,	Dec. 31
Clarksburg,	Dukes, Berkshire, Middlesex,	1909,	G. R. Brown,	June 1, 1909,	June 21,	Aug. 28
Concord,	Bristol,	Surfacing, 1909,	E. S. Clark,	June 16, 1909,	July 27,	Aug. 26
Dartmouth,	Bristol,	Surfacing, 1909,	W. M. Stodder,	June 1, 1909,	Aug. 4,	Sept. 18
Deerfield,	Bristol,	Surfacing, 1908,	W. G. Burns,	June 16, 1909,	June 25,	Sept. 7
Dighton,	Plymouth,	1909,	W. M. Stodder,	Oct. 13, 1908,	April 16,	May 15
Duxbury,	Barnstable,	1909,	W. G. Addis,	May 18, 1909,	July 13,	Sept. 10
Eastham,	Dukes,	Surfacing, 1909,	W. F. Hammersley,	July 30, 1909,	Aug. 23,	Dec. 15
Edgetown,	Franklin,	Surfacing, 1909,	A. J. C. Rayner,	June 1, 1909,	June 21,	Sept. 1
Erving,	Essex,	Surfacing, 1909,	W. G. Burns,	May 12, 1909,	June 1,	Aug. 17
Essex,	Barnstable,	1909,	H. C. Poore,	—	May 18,	June 17
Falmouth,	Norfolk,	Surfacing, 1908,	W. F. Hammersley,	Aug. 24, 1908,	Oct. 29,	Dec. 11
Foxborough,	Worcester,	Surfacing, 1908,	W. M. Stodder,	Oct. 14, 1908,	April 7,	June 19
Gardner,	Essex,	Surfacing, 1909,	H. C. Poore,	—	—	Sept. 14
Glencoester,	Worcester,	Surfacing, 1909,	C. L. Brown,	—	—	May 15,
Granby,	Hampshire,	Surfacing, 1909,	L. T. C. Loring,	June 1, 1909,	June 16,	July 26
Hamilton,	Essex,	1909,	R. C. Heath,	June 16, 1909,	June 25,	Aug. 24
Harwich,	Barnstable,	1908,	G. N. Willis,	July 14, 1909,	Aug. 16,	Dec. 4
Hatfield,	Hampshire,	1909,	W. F. Hammersley,	Aug. 25, 1908,	Oct. 1,	Feb. 9
Haverhill,	Essex,	1907,	E. S. Bligham,	Sept. 22, 1909,	Oct. 14,	Dec. 9
Haverhill,	Essex,	1907,	E. M. Stevens,	July 20, 1909,	Oct. 7,	Oct. 16
Haverhill,	Essex,	1907,	C. L. Brown,	July 20, 1909,	Aug. 4,	Oct. 9
Hingham,	Norfolk,	Surfacing, 1908,	A. F. Arnold,	July 20, 1909,	Oct. 14,	Dec. 24
Holden,	Worcester,	Surfacing, 1908,	H. C. Holden,	—	Aug. 19,	Sept. 25
Holden,	Worcester,	1908,	L. T. C. Loring,	May 25, 1909,	June 17,	Oct. 21
Huntington,	Hampshire,	1909,	L. T. C. Loring,	Sept. 23, 1908,	April 7,	May 1
Huntington,	Ipswich,	1909,	C. H. Lovejoy,	June 29, 1909,	July 13,	Oct. 5
Ipswich,	Lee,	1909,	J. F. Haley,	June 29, 1909,	July 13,	Oct. 5
Lee,	Berkshire,	Surfacing, 1908-9,	F. H. Morris,	May 18, 1909,	May 27,	Aug. 10
Berkshire,	Leicester,	Surfacing, 1909,	F. D. Sabin,	May 26, 1909,	June 9,	Sept. 11
Leicester,			A. D. Dadley,	Sept. 22, 1908,	Oct. 5,	Nov. 27
				Aug. 3, 1909,	Sept. 9,	Oct. 4

TABLE SHOWING TOWNS AND CITIES IN WHICH WORK HAS BEEN DONE, ETC. — *Concluded.*

Town or City.	County.	Lay-out.	Resident Engineer.	Date of Contract.	Date of Beginning, 1909.	Date of Ending, 1909.
Salem,	Essex,	1909,	E. J. Nichols,	June 16, 1909,	Sept. 4,	
Salem,	Essex,	1909,	G. N. Willis,	June 16, 1909,	Sept. 4,	
Seituate,	Plymouth,	1909,	W. G. Addis,	May 12, 1909,	June 1,	Sept. 22
Somerset,	Bristol,	1909,	W. M. Stodder,	Oct. 12, 1909,	Nov. 29,	Dec. 24
So. Hadley,	Hampshire,	Surfacing,	R. C. Heath,	June 16, 1909,	June 25,	Aug. 24
So. Hadley,	Hampshire,	1909,	R. C. Heath,	July 27, 1909,	Aug. 2,	Oct. 2
Southampton,	Hampshire,	1909 (Bridge),	P. H. Everett,	June 22, 1909,	Aug. 2,	Nov. 26
Southborough,	Worcester,	1909,	W. N. Chittenden,	Aug. 17, 1909,	Oct. 11,	Nov. 6
Southborough,	Worcester,	1909,	C. H. Norton,	Aug. 17, 1909,	Nov. 8,	Dec. 11
Spencer,	Worcester,	Surfacing,	L. T. C. Loring,	Aug. 17, 1909,	Dec. 13,	Dec. 20
Sterling,	Worcester,	1909,	A. D. Dadley,	June 22, 1909,	July 27,	Sept. 22
Stockbridge,	Berkshire,	1909,	C. H. Norton,	July 13, 1909,	July 22,	Oct. 20
Stockbridge,	Berkshire,	1909,	A. D. Dadley,	July 13, 1909,	July 20,	Oct. 5
Stonington,	Norfolk,	Surfacing,	F. D. Sabin,	Aug. 3, 1909,	Aug. 9,	Nov. 27
Stonington,	Norfolk,	Surfacing,	C. S. Tinkham,	—	—	Oct. 14
Sturbridge,	Worcester,	1909,	H. C. Holden,	—	—	Oct. 14
Sturbridge,	Worcester,	1909,	A. D. Dadley,	May 12, 1909,	Oct. 2,	Nov. 23
Sturbridge,	Worcester,	1909,	A. T. Edwards,	May 12, 1909,	Aug. 30,	Oct. 2
Sunderland,	Franklin,	1909,	L. T. C. Loring,	May 12, 1909,	June 10,	Aug. 28
Swansea,	Bristol,	1909,	W. G. Burns,	Aug. 3, 1909,	Sept. 29,	Nov. 5
Templeton,	Worcester,	1909,	W. M. Stodder,	Sept. 8, 1909,	Sept. 20,	Dec. 14
Tewksbury,	Middlesex,	Oiling,	R. A. Vesper,	June 22, 1909,	July 8,	Dec. 4
Tyngsborough,	Middlesex,	1909,	R. C. Heath,	Aug. 24, 1909,	Aug. 19,	Oct. 9
Uxbridge,	Worcester,	1909,	C. H. Norton,	June 1, 1909,	June 11,	Sept. 27
Uxbridge,	Worcester,	1909,	L. T. C. Loring,	July 21, 1909,	Sept. 13,	Oct. 2
Uxbridge,	Worcester,	1909,	—	July 21, 1909,	Oct. 30,	Nov. 27
Walpole,	Norfolk,	Surfacing,	A. T. Edwards,	July 21, 1909,	Oct. 2,	Oct. 30
Wareham,	Plymouth,	1909,	F. H. Cunningham,	July 20, 1909,	Oct. 9,	Nov. 2
Wareham (east),	Plymouth,	Surfacing,	H. O. Parker,	Aug. 10, 1909,	Aug. 31,	Dec. 18
Wareham (east),	Plymouth,	Surfacing,	A. J. C. Rayner,	June 22, 1909,	Oct. 2,	Oct. 23
Watertown,	Middlesex,	Surfacing,	H. O. Parker,	June 22, 1909,	Sept. 16,	Oct. 2
			R. C. Heath,	Sept. 29, 1909,	Oct. 11,	Nov. 22

West Bridgewater,	Plymouth,	Surfacing,	W. M. Stodder,	June 22, 1909,
Westfield,	Hampden,	Surfacing,	E. S. Bingham,	May 18, 1909,
West Newbury,	Essex,	Surfacing,	E. M. Stevens,	May 5, Aug. 7
West Newbury,	Essex,	1909,	E. M. Stevens,	June 22, 1909,
Westminster,	Worcester,	Surfacing,	E. M. Stevens,	June 16, 1909,
West Springfield,	Hampden,	Surfacing,	H. C. Poore,	—
Weston,	Middlesex,	Surfacing,	E. S. Bingham,	June 22, 1909,
Westwood,	Norfolk,	Surfacing,	R. C. Heath,	Aug. 18, 1909,
Weymouth,	Franklin,	1908,	C. S. Tinkham,	—
Whately,	Middlesex,	Surfacing,	H. C. Holden,	Oct. 14, 1908,
Wilmington,	Worcester,	Surfacing,	W. G. Burns,	June 29, 1909,
Worcester (Paxton),	Worcester,	Surfacing,	R. C. Heath,	Aug. 24, 1909,
Wrentham,	Berkshire,	1906,	G. L. Lawrence,	June 16, 1909,
	Norfolk,	Surfacing,	A. T. Edwards,	June 16, 1909,
			L. T. C. Loring,	May 25, 1909,
			F. D. Sabin,	Aug. 14, 1907,
			C. S. Tinkham,	Aug. 31, 1909,

APPENDIX C.

SHOWING CONTRACT PRICES ON

	TOWN OR CITY.	Contract Number.	Contractor.	EXCAVATION.			Portland Cement Concrete Masonry.	Shaping (Square Yard).
				All Kinds (Cubic Yard),	Borrow (Cubic Yard),	Ledge (Cubic Yard),		
1	Agawam, . . .	1295	Lane Construction Corporation.	\$0 50	\$0 65	-	\$15 00	\$0 03
2	Ashby, . . .	1238	Charles E. Horne, .	-	-	-	-	-
3	Athol, . . .	1325	Rendle & Stoddard, .	22 25	70	-	38 50	-
4	Attleborough, . . .	1239	Luigi C. Carchia, .	35	55	\$2 00	10 00	02
5	Auburn, . . .	1260	Worcester Broken Stone Company.	-	-	-	-	-
6	Barnstable, . . .	1287	Luigi C. Carchia, .	50	75	2 00	8 00	02 $\frac{1}{2}$
7	Barre, . . .	1261	Worcester Broken Stone Company.	-	-	-	-	-
8	Becket, . . .	1299	John W. Polcaro, .	57	70	1 00	14 50	-
9	Blackstone, . . .	1330	Lane Construction Corporation.	40	50	3 00	9 00	03
10	Charlton, . . .	1297	Richmond F. Hudson,	75	75	3 00	101 20	-
11	Chilmark, . . .	1327	Town, . . .	35	50	2 00	10 00	03
12	Clarksburg, . . .	1248	Guiseppe I. Cellilli, .	47	121 48	2 15	125 23 9 50	03
13	Concord-Lincoln, .	1262	Fred E. Ellis, .	-	-	-	-	-
14	Chester-Huntington, .	1275	M. D'Arena & P. Giovannini.	45	65	2 00	8 00	02 $\frac{1}{2}$
15	Dartmouth, . . .	1249	Luigi C. Carchia, .	-	-	-	-	-
16	Deerfield, . . .	1263	Lane Construction Corporation.	40	65	01	9 00	03
17	Duxbury, . . .	1237	Town, . . .	45	55	2 00	-	03
18	Edgartown-Oak Bluffs, .	1250	Charles T. Alger, .	-	-	-	-	-
19	Erving, . . .	1233	Francis J. Mague, .	55	60	1 75	8 00	02 $\frac{1}{2}$
20	Eastham, . . .	1290	Town, . . .	30	35	-	8 00	-
21	Falmouth, . . .	1301	Lane Quarry Company,	45	60	-	12 00	-
22	Grafton, . . .	1251	Worcester Broken Stone Company.	-	-	-	-	-
23	Granby-South Hadley, .	1264	Lane Construction Corporation.	-	-	-	-	-
24	Hamilton, . . .	1282	Town, . . .	50	60	2 00	9 00	02 $\frac{1}{2}$

¹ Sand binder.² Bridge excavation.³ Portland cement concrete steel masonry in bridge.⁴ Chestnut piles (each).⁵ Steel I beams (each).⁶ Eight-inch clay pipe.⁷ Fifteen-inch clay pipe.

APPENDIX C.

STATE ROADS DURING 1909.

	BROKEN STONE.	PIPE CULVERTS (PER LINEAL FOOT).												Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Under- drains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).	Bituminous (Square Yard).	Surfacing (Square Yard).					
		CLAY.			IRON.			CLAY.			IRON.														
		Twelve-inch.	Eighteen- inch.	Twenty-four- inch.	Twelve-inch.	Eighteen- inch.	Twenty-four- inch.	Twelve-inch.	Eighteen- inch.	Twenty-four- inch.	Twelve-inch.	Eighteen- inch.	Twenty-four- inch.												
-	\$2 50	-	-	-	\$2 50	-	-	\$0 30	-	-	\$0 30	-	-	\$0 18	1										
\$1 38	-	2 25	-	-	-	1 00	-	-	-	-	-	-	-	-	-	-	-	-	2						
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1 35	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	70	2 00	30 00	-	4					
-	2 09	-	75	665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	5					
1 95	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	2 00	30 00	-	6					
-	82 85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7					
-	-	75	-	-	-	-	-	2 25	-	-	-	-	-	37 9\$0 10	75	-	-	-	-	8					
-	1 90	75	-	-	-	-	-	-	-	-	-	-	-	30	-	-	1 50	-	-	9					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	1 00	3 00	-	-	10					
1 75	-	80	650	7\$1 50	-	-	-	-	-	-	-	-	-	30	1165	85	2 10	30 00	-	11					
1 68	2 57	78	1 23	663	2 25	\$2 89	14\$0 67	-	-	-	-	-	-	24	68	78	1 85	37 75	-	12					
-	2 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13					
-	1 99	80	-	-	-	2 10	-	-	-	-	-	-	-	27	-	95	1 50	-	-	14					
1 55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15						
-	82 90	75	-	2 50	-	-	-	-	-	-	-	-	-	30	-	-	1 50	-	-	16					
82 55	-	650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 50	35 00	-	17					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	06 18							
-	1 80	75	-	-	-	2 25	-	-	-	-	-	-	-	27	1 00	-	1 75	30 00	-	19					
-	-	655	-	-	-	-	-	-	-	-	-	-	-	30	-	-	1 00	30 00	14 20						
-	-	1470	-	-	-	-	-	-	-	-	-	-	-	30	-	-	3 00	35 00	28 21						
-	1 97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22						
-	2 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23						
-	154 00	75	790	-	2 00	-	-	30	-	-	1 50	-	-	30 00	-	-	30 00	-	24						
	1 85																								

⁸ Includes bituminous treatment.⁹ Stock fence.¹⁰ Gravel for surfacing.¹¹ Clay binder (per cubic yard).¹² Unscreened broken stone (per ton).¹³ Dry rubble masonry.¹⁴ Ten-inch clay pipe.¹⁵ Mixed with bituminous materials.

SHOWING CONTRACT PRICES ON

	TOWN OR CITY.	Contract Number.	Contractor.	EXCAVATION.			Portland Cement Concrete Masonry.	Shaping (Square Yard).
				All Kinds (Cubic Yard).	Borrow (Cubic Yard).	Ledge (Cubic Yard).		
1	Hatfield, . . .	1319	Town, . . .	\$0 50	\$0 55	-	\$10 00	\$0 02
2	Haverhill, . . .	1283	James E. Watkins, .	277½ 42½	51½	\$1 50	12 75	02
3	Ipswich, . . .	1240	James E. Watkins, .	50	67	1 60	9 75	02½
4	Lee, . . .	1243	D. Hammond & Bro., .	49	-	-	-	-
5	Lee-Becket, . . .	1289	John W. Polcaro, .	-	60	-	10 00	-
6	Leicester, . . .	1291	Charles E. Horne, .	55	62 00	-	-	-
7	Marion, . . .	1257	William F. Loud & Son, .	-	-	-	-	-
8	Marhsfield, . . .	1252	Luigi C. Carchia, .	40	70	2 00	10 00	02
9	Mattapoisett, . . .	1258	William F. Loud & Son, .	-	-	-	-	-
10	Milford, . . .	1230	Lane Construction Corporation.	60	60	1 50	9 00	03
11	Montague, . . .	1316	John B. Hayes, .	35	55	10	9 50	02½
12	Nantucket, . . .	1259	Herbert L. Thomas, .	-	-	-	-	-
13	Newbury (Bridge), .	1320	New England Contracting Company.	13-	1 90	-	8 45	-
14	Norfolk-Walpole, .	1284	John F. Gill Company, .	-	-	-	-	-
15	Northampton, . . .	1253	David T. Perry, .	-	-	-	-	-
16	Norwood-Walpole, .	1285	Snow & Farrington, .	-	-	-	-	-
17	Orange, . . .	1278	Francis J. Mague, .	-	-	-	-	-
18	Oxford, . . .	1234	A. Vito, . . .	50	50	1 50	6 75	02
19	Palmer, . . .	1302	William N. Flynt Granite Company.	260 40	40	2 50	16 00	03
20	Pittsfield-Lenox, .	1254	Olin T. Benedict, .	-	-	-	-	-
21	Pittsfield, . . .	1292	Olin T. Benedict, .	50	-	3 00	10 00	03
22	Quiney, . . .	1328	City, . . .	70	-	1 50	8 50	03
23	Randolph, . . .	1317	Edward J. Rourke, .	50	60	1 50	10 00	03
24	Revere-Saugus, .	1318	Richmond F. Hudson, .	-	-	-	-	-
25	Rowley, . . .	1232	John Collins, . . .	40	50	2 00	8 00	02
26	Russell, . . .	1244	Lane Quarry Company, .	-	-	-	-	-
27	Salem, . . .	1265	D. Linehan & Son, .	22 00 50	80	2 00	22 11 00 7 00	02
28	Scituate, . . .	1235	John A. Gaffey, .	50	65	2 00	11 00	03
29	Somerset, . . .	1324	Town, . . .	45	50	2 00	10 00	03
30	Somerville, . . .	1329	John C. Coleman & Sons Company.	-	-	-	-	-

¹ Twenty-inch iron pipe.² Bridge excavation.³ Cobblestone gutters.⁴ Includes bituminous treatment.⁵ Broken stone, excavated, screened and replaced.⁶ Sand for binder.⁷ Fifteen-inch iron pipe.⁸ Fifteen-inch clay pipe.⁹ Eight-inch clay pipe.¹⁰ Eight-inch iron pipe.¹¹ Sand and oil surface (2 inches in thickness).¹² Sand and oil surface (1 inch in thickness).¹³ Bridge superstructure (lump sum, \$9,237.90).

STATE ROADS DURING 1909 — *Continued.*

BROKEN STONE.		PIPE CULVERTS (PER LINEAL FOOT).											
Local (Ton).	Trap (Ton).	CLAY.			IRON.			Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Under-drains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).	Bituminous Surfacing (Square Yard).
		Twelve-inch.	Eighteen-inch.	Twenty-four-inch.	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.						
-	\$2 10	\$0 75	-	-	1\$4 00	-	-	\$0 35	-	-	\$2 00	\$25 00	-
\$1 50	-	65	-	-	-	-	-	29 3\$0 72½	-	-	1 50	28 00	-
-	42 28	-	\$1 40	-	-	-	-	29	-	-	1 75	-	3
560	2 00	-	-	-	-	-	-	-	-	\$1 00	-	-	4
-	-	-	-	-	2 25	-	-	-	-	-	-	-	5
1 62	2 29	-	-	-	-	-	-	-	-	98	-	-	6
1 97	-	-	-	-	-	-	-	-	-	-	-	-	7
*1 70	-	1 00	-	-	2 00	7\$3 00	-	30	-	80	2 00	23 00	-
1 87	-	-	-	-	-	-	-	-	-	-	-	-	9
*2 05	-	75	1 50	8\$1 00	-	-	-	30	-	-	2 00	-	10
-	1 85	70	950	-	2 00	101 50	-	-	-	-	1 50	27 00	-
-	-	-	-	-	-	-	-	61½	-	-	-	-	1120 12
-	-	-	-	-	-	-	-	-	-	-	-	-	1208 13
-	2 89	-	-	-	-	-	-	-	-	-	-	-	14— 14
-	1 90	-	-	-	-	-	-	-	-	-	-	-	15
-	3 00	-	-	-	-	-	-	-	-	-	-	-	14— 16
-	2 35	-	-	-	-	-	-	-	-	-	-	-	33 17
*1 53	-	75	1 50	-	-	2 50	-	30	-	50	1 50	-	-
1 70	-	151 00	1617 00	177 75	1816 00	-	-	30 191 25	1 25	2 50	25 00	-	19
-	*4 49	-	-	-	-	-	-	-	-	-	-	-	20
-	1 90	-	-	-	3 25	202 00	-	30 380	1 20	2 50	30 00	30 21	-
1 53	-	75	955	-	-	-	-	30	-	65	2 00	30 00	-
1 50	-	-	1560	-	-	-	-	30	-	-	2 00	30 00	-
-	-	-	-	-	-	-	-	-	-	-	-	-	2138 24
1 30	-	65	85	-	2 85	202 75	-	30	-	-	1 00	25 00	-
-	2 23	-	-	-	-	-	-	-	-	-	-	-	14— 26
-	1 45	65	1 60	-	-	-	-	30	-	-	2 00	30 00	-
*2 25	-	75	965	-	-	-	-	30	-	1 00	2 00	30 00	-
-	2 44	75	81 15	-	2 00	-	-	30	-	90	2 00	30 00	-
-	-	1885	-	-	-	-	-	2386 241 20	-	-	35 00	-	30

¹⁴ Bituminous surfacing applied at cost.¹⁵ Ten-inch clay pipe.¹⁶ Arch masonry.¹⁷ First-class masonry.¹⁸ Parapet masonry.¹⁹ Rock embankment.²⁰ Ten-inch iron pipe.²¹ Mixing and applying.²² Concrete masonry in bridge.²³ Straight edgestones (per lineal foot).²⁴ Curved edgestones (per lineal foot).

SHOWING CONTRACT PRICES ON

	TOWN OR CITY.	Contract Number.	Contractor.	EXCAVATION.			Portland Cement Concrete Masonry.	Shaping (Square Yard).
				All Kinds (Cubic Yard).	Borrow (Cubic Yard).	Ledge (Cubic Yard).		
1	Southampton, . . .	1268	P. A. Breglio Contracting Company.	\$0 75	\$2 00	\$18 00	\$10 00	\$0 03½
2	Southborough, . . .	1298	Francis J. Mague, . . .	50 60	-	2 00	9 00	-
3	South Hadley, . . .	1288	Town, . . .	60	75	-	12 00	.03
4	Spencer, . . .	1269	John F. Gill Company,	90	-	-	-	-
5	Sterling, . . .	1281	Guiseppe I. Cellilli, . . .	42	-	1 59	10 00	.02
6	Stockbridge, . . .	1293	Michael L. Camarco, . . .	55	65	2 50	10 50	.03
7	Sturbridge, . . .	1236	A. Vito, . . .	50	-	1 50	6 75	.03
8	Sunderland, . . .	1294	Lane Construction Corporation.	60	65	.70	14 00	.04
9	Swansea, . . .	1315	Town, . . .	45	50	2 00	10 00	.03
10	Tewksbury - Wilmington-Lowell.	1303	Harvey W. Tarbell, . . .	-	-	-	-	-
11	Templeton-Phillipston, .	1270	Francis J. Mague, . . .	60	60	1 25	10 00	.03
12	Tyngsborough, . . .	1255	Herbert L. Thomas, . . .	50	50	2 00	12 ½ 50 16 00	.03
13	Uxbridge, . . .	1286	Town, . . .	45	65	2 00	9 00	.03
14	Wareham, . . .	1271	Lane Quarry Company,	-	-	-	-	-
15	Wareham-Rochester, .	1296	Edward J. Rourke, . . .	40	50	1 50	10 00	-
16	Watertown, . . .	1322	Town, . . .	-	-	-	-	-
17	Westfield, . . .	1241	Lane Construction Corporation.	-	-	-	-	-
18	Weston-Wayland-Sudbury,	1300	Walter Cressy, . . .	-	-	-	-	-
19	West Bridgewater, . . .	1272	Edward J. Rourke, . . .	-	-	-	-	-
20	West Newbury, . . .	1266	Richmond F. Hudson,	50	60	2 00	9 00	.02
21	West Newbury-Newburyport.	1273	Richmond F. Hudson,	-	-	-	-	-
22	West Springfield, . . .	1274	Lane Construction Corporation.	-	-	-	-	-
23	Whately, . . .	1276	David T. Perry, . . .	-	-	-	-	-
24	Worcester-Holden, . . .	1242	Charles E. Horne, . . .	55	-	1 00	-	61 00
25	Worcester-Paxton, . . .	1267	D'Arena & Giuliane, . . .	45	-	-	-	62 00
26	Wrentham-Plainville, . . .	1304	Charles T. Alger, . . .	-	-	-	-	-

¹ Bridge excavation.² Rock embankment.³ Portland cement concrete steel masonry in bridge.⁴ Spruce piles (each).⁵ Gravel for surfacing.⁶ Broken stone, excavated, screened and replaced.

STATE ROADS DURING 1909 — Concluded.

BROKEN STONE.	PIPE CULVERTS (PER LINEAL FOOT).										Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Under- drains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).	Bituminous Surfaceing (Square Yard).			
	CLAY.			IRON.															
	Twelve-inch.	Eighteen inch.	Twenty-four- inch.	Twelve-inch.	Eighteen inch.	Twenty-four- inch.													
-	\$2 00	-	-	-	-	-					\$1 00	-			-	1			
50 85	-	-	-	-	-	-					-	-	1 10	2 00	-	-	2		
-	2 00	\$0 80	-	-	-	-	\$2 50	-	-	-	-	-	2 00	\$35 00	-	-	3		
1 50	-	-	-	-	-	-	-	-	-	-	-	-	1 50	-	-	\$0 27	4		
1 55	-	-	-	-	-	-	-	-	-	-	-	-	62	2 25	-	-	5		
-	1 72	59	-	-	2 18	-	-	-	-	-	-	-	-	-	-	-	6		
1 95	2 25	785	\$0 75	-	-	2 50	-	-	-	-	-	-	1 25	2 25	25 00	-	7		
1 30	-	75	-	-	2 50	-	-	-	-	-	-	-	50	2 00	-	-	8		
-	2 55	-	-	-	-	-	-	-	-	-	-	-	30	-	2 00	-	9		
1 45	-	75	\$50	¹⁰ \$1 10	2 00	¹¹ \$1 25	-	-	-	-	-	-	85	1 50	30 00	-	10		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	05	10		
-	-	75	-	-	2 25	-	-	-	-	-	-	-	25	-	75	2 00	30 00	30 11	
-	-	1 90	80	1 30	780	-	-	-	-	-	-	-	30	¹³ \$0 55	-	2 00	30 00	-	12
-	-	-	75	-	-	-	-	-	-	-	-	-	25	-	51 00	1 50	-	-	13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	14	
-	-	-	75	\$50	-	¹² 2 00	-	-	-	-	-	-	30	-	1 00	2 00	30 00	28 15	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	16	
-	2 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	05	18		
1 75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	19	
1 70	-	-	70	1 50	⁷ 60	-	-	-	-	-	-	-	30	-	-	2 00	30 00	-	20
2 25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	21	
-	2 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	22
-	2 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	23
1 ⁴² 96	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	24	
1 ⁴² 93	-	-	-	-	-	-	-	-	-	-	-	-	1 00	-	-	-	-	25	
2 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	06 $\frac{1}{2}$	26		

⁷ Ten-inch clay pipe.⁸ Eight-inch clay pipe.⁹ Culvert excavation.¹⁰ Fifteen-inch clay pipe.¹¹ Eight-inch iron pipe.¹² Dry rubble masonry.¹³ Cobblestone gutters.¹⁴ Mixed with bituminous materials.

APPENDIX D.

STATEMENT OF CLAIMS AGAINST THE COMMISSION.

[As required by section 5, chapter 18 of the Revised Laws.]

NAME.	Residence.	Nature of Claim.
Chase, Charles A., . . .	Somerset, . . .	Damages caused by drainage conditions on State highway at Somerset.
Flagg, Lucretia T., . . .	Northampton, . . .	Damages due to construction of State highway at Northampton.
Hill, Everett, . . .	Charlton, . . .	Damages due to construction of State highway at Charlton.
Lincoln, Benj. A., . . .	Taunton, . . .	Damages due to construction of State highway at Taunton.
McLaughlin, Nancy M., . . .	Dover, . . .	Damages due to construction of State highway at Dover.
Nourse, Joseph P., . . .	Marlborough, . . .	Damages due to construction of State highway at Marlborough.
Seabury, Phoebe W., . . .	Dartmouth, . . .	Damages due to construction of State highway at Dartmouth.
Sullivan, Kate, . . .	Millbury, . . .	Damages due to construction of State highway at Millbury.
Taft, Kate P., . . .	Northampton, . . .	Damages due to construction of State highway at Northampton.
Talbot, Joseph, . . .	Taunton, . . .	Damages due to construction of State highway at Taunton.
Warren, Alice E. M., . . .	Auburn, . . .	Damages due to construction of State highway at Auburn.

APPENDIX E.

COST PER MILE OF ROAD (SECTIONS COMPLETED DURING THE YEAR 1909).¹

TOWN OR CITY.	Square Yards.	Miles.	Cost per Mile.
Agawam, ²	7,705	.876	\$11,530 01
Attleborough,	6,500	.740	5,651 01
Becket, 1908,	31,083	3.532	12,005 24
Billerica, 1908,	5,088	.578	9,909 05
Chilmark, 1908, ³	5,332	.814	5,798 46
Chester-Huntington,	11,367	1.292	7,737 47
Clarksburg, 1907-09,	4,152	.478	15,122 17
Deerfield, ²	5,245	.600	14,646 73
Dighton, 1908,	5,943	.677	5,920 97
Duxbury, ²	6,070	.690	7,435 24
Erving,	5,755	.654	10,590 24
Foxborough, 1908,	5,963	.677	5,922 62
Harwich-Brewster-Orleans, 1908, ⁴ . . .	10,301	1.951	4,572 35
Holden, 1908,	3,217	.366	7,060 25
Ipswich,	7,750	.881	9,221 06
Littleton,	4,583	.521	1,420 40
Marlborough, 1908, ⁵	7,160	.814	5,858 75
Marshfield, ²	6,498	.738	6,307 77
Milford, ²	5,488	.624	8,528 00
Montague,	5,308	.603	8,177 18
Norton, 1908,	6,957	.790	5,569 50
Oxford, 1908,	5,500	.625	8,707 60
Oxford, 1909, ²	6,313	.718	8,212 74
Palmer, 1908,	30,450	3.441	10,214 65
Randolph,	4,553	.517	5,212 90
Rowley, ⁶	12,331	1.401	4,837 42

¹ Exclusive of bridges.² Includes cost of bituminous surfacing.³ Macadam 12 feet in width.⁴ Sand and oil mixture greater than 3 inches in thickness.⁵ Gravel road with sand and oil surface.⁶ 2,420 feet gravel; balance macadam.

COST PER MILE OF ROAD, ETC. — *Concluded.*

TOWN OR CITY.	Square Yards.	Miles.	Cost per Mile.
Scituate, ¹	4,500	.510	\$11,654 71
South Hadley,	5,473	.622	11,154 29
Sterling,	5,333	.606	7,900 64
Sunderland,	1,488	.170	9,388 94
Tyngsborough,	16,423	1.867	8,026 61
Wareham-Rochester, ²	13,743	1.562	3,723 92
Weymouth, 1908,	7,750	.881	4,653 42
West Newbury,	12,085	1.373	9,461 47
Totals,	283,407	33.189	—
Average cost per mile,			\$8,177 38

¹ Includes cost of bituminous surfacing.² Sand and oil mixture greater than 3 inches in thickness.

APPENDIX E.

MAINTENANCE.

Table showing the Amounts expended for Repair and Maintenance, the Cost per Mile for Maintenance during 1909, the Cost per Mile per Year on Each Road, the Number of Miles under Maintenance and the Amounts to be assessed upon Municipalities for Maintenance under Chapter 47 of the Revised Laws.

Table showing the Amounts expended for Repairs, Maintenance, etc.—Continued.

TOWN OR CITY.	AMOUNT EXPENDED.				EXPENDED PER MILE IN 1909.			Length Under Maintenance (Miles).	Amount to be Assessed on Cities and Towns.
	To 1909.	In 1909 from Revenue Appropriation.	In 1909 from Motor Vehicle Fees Fund.	Total.	From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.		
Attleborough,	\$3,604 13	\$287 21	—	\$3,891 34	\$84 72	—	\$84 72	\$184 51	3.39
Auburn,	6,008 89	4,304 20	\$6,325 96	16,639 05	815 19	\$1,198 09	2,013 28	340 90	5.28
Barnstable,	2,936 58	574 19	—	3,510 77	89 44	—	89 44	79 23	6.42
Barre,	1,487 75	126 65	104 98	1,719 38	43 82	36 33	80 15	67 29	2.89
Becket,	990 01	354 30	143 60	1,487 91	63 84	25 87	89 71	150 75	5.55
Bedford,	673 38	197 97	1 99	873 34	119 98	1 20	121 18	75 22	1.65
Belchertown,	700 53	70 52	—	771 05	30 00	—	30 00	60 85	2.35
Bellingham,	308 33	107 76	60	416 63	33 86	18	34 04	32 96	3.18
Berkley,	164 19	29 13	—	193 32	37 83	—	37 83	83 68	.77
Beverly,	13,425 46	3,211 17	1,260 98	17,897 61	565 34	222 00	787 34	443 78	5.68
Billerica,	147 27	27 91	—	175 18	48 12	—	48 12	729 92	.58
Blackstone,	1,182 60	131 50	40	1,314 50	73 05	22	73 27	88 40	1.80
Bourne,	1,958 32	1,250 25	1,630 85	4,839 42	277 88	362 41	640 24	175 78	4.50
Borborough,	902 75	184 66	—	1,087 41	55 78	—	55 78	53 33	3.31
Braintree,	460 54	100 02	—	560 56	94 35	—	94 35	69 13	1.06
Brewster,	5,338 51	521 12	—	5,859 63	66 63	—	66 63	77 36	7.82
Bridgewater,	382 47	357 47	—	739 94	103 01	—	103 01	53 42	3.47
Brinfield,	1,915 61	61 91	—	1,977 52	15 59	—	15 59	53 91	3.97

Brockton,	*	*	6,293 35	344 77	27 68	6,665 80	108 07	8 67	116 74	228 36	3 19
Brookfield,	*	*	2,643 38	620 79	527 51	3,791 68	159 58	135 60	295 18	139 24	3 89
Buckland,	*	*	4,972 83	511 78	-	5,484 61	119 57	-	119 57	130 64	4 28
Burlington,	*	*	1,410 08	569 58	-	1,979 66	149 87	-	149 87	113 18	3 80
Canton,	*	*	442 64	1,000 42	2,063 02	3,506 08	309 72	638 70	948 42	436 07	3 23
Charlemont,	*	*	4,257 00	254 12	-	4,511 12	330 02	-	330 02	520 91	.77
Charlton,	*	*	1,229 60	574 46	43 81	1,847 87	178 95	13 64	192 59	110 05	3 21
Chatham,	*	*	1,616 56	457 89	-	2,074 45	63 86	-	63 86	71 16	7 17
Chelmsford,	*	*	1,638 63	730 62	20	2,369 45	173 54	04	173 58	102 75	4 21
Chelsea,	*	*	462 80	129 96	75	593 51	135 37	78	136 15	101 11	.96
Cheshire,	*	*	1,911 98	161 12	-	2,073 10	61 96	-	61 96	95 05	2 60
Chester,	*	*	2,360 56	438 24	-	2,798 80	102 39	-	102 39	131 21	4 28
Chicopee,	*	*	9,158 17	1,551 08	3 10	10,712 35	398 73	79	399 52	459 16	3 89
Chilmark,	*	*	312 01	202 06	-	514 07	55 97	-	55 97	46 62	3 61
Clarksburg,	*	*	321 75	84 73	-	406 48	78 45	-	78 45	163 90	1 08
Cohasset,	*	*	939 38	120 73	-	1,060 11	52 95	-	52 95	50 99	2 28
Colrain,	*	*	1,621 94	139 97	-	1,761 91	65 71	-	65 71	98 32	2 13
Concord,	*	*	2,090 60	5,799 74	216 81	8,107 15	1,615 52	60 39	1,675 91	304 21	3 59
Dalton,	*	*	5,018 60	221 47	-	5,240 07	86 51	-	86 51	202 47	2 56
Dartmouth,	*	*	1,863 12	2,667 32	19 13	4,549 57	587 51	4 21	591 72	138 07	4 54
Deerfield,	*	*	6,086 42	658 66	-	6,745 08	108 51	-	108 51	178 44	6 07
Dennis,	*	*	5,042 77	458 56	-	5,501 33	61 14	-	61 14	75 37	7 50
Dighton,	*	*	501 68	74 58	24 20	600 46	27 02	8 76	35 78	49 55	2 76

HIGHWAY COMMISSION.

[Pub. Doc.]

Table showing the Amounts expended for Repairs, Maintenance, etc. — Continued.

TOWN OR CITY.	AMOUNT EXPENDED.				EXPENDED PER MILE IN 1909.				Length under Maintenance (Miles).	Amount to be Assessed on Cities and Towns.
	To 1909.	In 1909 from Revenue Appropriation.	In 1909 from Motor Vehicle Fees Fund.	Total.	From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.	Cost per Mile per Year.		
Douglas,	\$900 06	\$173 65	\$53 75	\$1,127 46	\$81 52	\$25 23	\$106 75	\$101 84	2.13	\$106 50
Dover,	215 51	260 60	80	477 00	119 58	36	119 94	94 64	2.18	109 00
Dracut,	25 32	255 23	—	280 55	139 46	—	139 46	58 81	1.83	91 50
Dudley,	1,507 44	440 38	—	1,947 82	192 31	—	192 31	214 52	2.29	114 50
Duxbury,	2,403 93	376 25	—	2,780 18	72 92	—	72 92	79 95	5.16	258 00
East Longmeadow,	139 65	69 24	—	208 89	66 58	—	66 58	45 01	1.04	52 00
Eastham,	1,630 27	519 65	2 16	2,152 08	153 74	64	154 38	174 82	3.38	169 00
Easthampton,	2,106 87	151 60	—	2,258 47	62 64	—	62 64	83 31	2.42	121 00
Easton,	2,665 89	67 45	12 62	2,745 96	84 31	15 77	100 08	382 97	.80	40 00
Edgartown,	879 55	2,374 90	248 44	3,502 89	981 36	102 66	1,084 02	172 13	2.42	121 00
Erving,	2,071 36	364 90	4 84	2,441 10	108 60	1 44	110 04	115 80	3.36	168 00
Essex,	389 20	2,578 88	85 09	3,053 17	7,368 23	243 11	7,611 34	1,394 14	.35	17 50
Fairhaven,	1,007 18	176 61	—	1,183 79	121 80	—	121 80	57 60	1.45	72 50
Falmouth,	2,427 38	1,427 09	—	3,854 47	106 18	—	106 18	62 58	13.44	672 00
Fitchburg,	7,716 69	445 24	—	8,161 93	108 07	—	108 07	218 00	4.12	206 00
Foxborough,	531 49	226 73	—	758 22	64 60	—	64 60	43 82	3.51	175 50
Framingham,	122 28	165 23	40	287 91	67 72	16	67 88	32 49	2.44	122 00
Franklin,	140 39	67 93	40	208 72	49 22	29	49 51	53 11	1.38	67 93

Freetown,	.	•	•	•	•	•	338 52	419 46	-	1,257 98	-	-	108 39	60 68	3.87	193 50
Gardner,	.	•	•	•	•	•	3,296 46	859 56	430 72	4,586 74	255 82	128 19	384 01	131 01	3.36	168 00
Gloucester,	.	•	•	•	•	•	9,277 06	7,794 43	834 03	17,905 52	1,958 40	209 56	2,167 96	520 35	3.98	199 00
Goshen,	.	•	•	•	•	•	6,057 56	124 87	-	6,182 43	50 76	-	50 76	229 06	2.46	-
Grafton,	.	•	•	•	•	•	3,760 87	2,466 19	627 42	6,584 48	1,293 02	306 06	1,509 08	375 38	2.05	102 50
Granby,	.	•	•	•	•	•	2,436 11	2,631 81	112 37	5,180 29	1,078 61	46 05	1,124 66	328 91	2.44	122 00
Great Barrington,	.	•	•	•	•	•	10,923 63	295 63	1,510 80	12,730 06	86 69	443 05	529 74	320 41	3.41	170 50
Greenfield,	.	•	•	•	•	•	898 92	304 44	-	1,293 36	86 49	-	86 49	66 30	3.52	176 00
Groton,	.	•	•	•	•	•	478 12	59 77	25 00	562 89	42 39	17 73	60 12	58 21	1.41	59 77
GroveLand,	.	•	•	•	•	•	871 01	303 81	65	1,175 47	176 63	38	177 01	103 74	1.72	\$6 00
Hadley,	.	•	•	•	•	•	5,158 05	851 14	44 62	6,053 81	181 48	9 51	190 99	136 41	4.69	234 50
Hamilton,	.	•	•	•	•	•	2,423 46	134 30	199 45	2,757 21	88 36	131 22	219 58	189 14	1.52	76 00
Hancock,	.	•	•	•	•	•	7,025 48	939 68	-	8,565 16	290 92	-	290 92	231 74	3.23	161 50
Hanover,	.	•	•	•	•	•	106 10	154 10	-	260 20	83 30	-	83 30	74 13	1.85	92 50
Hardwick,	.	•	•	•	•	•	772 87	217 87	-	990 74	265 70	-	265 70	123 22	.82	41 00
Harvard,	.	•	•	•	•	•	380 45	63 10	-	443 55	39 94	-	39 94	46 49	1.58	63 10
Harwich,	.	•	•	•	•	•	2,762 04	442 95	-	3,204 99	68 36	-	68 36	78 30	6.48	224 00
Haifield,	.	•	•	•	•	•	457 18	23 40	-	480 58	20 00	-	20 00	410 75	1.17	23 40
Haverhill,	.	•	•	•	•	•	7,262 20	200 78	1 00	7,463 98	54 26	27	54 53	261 25	3.70	185 00
Hingham,	.	•	•	•	•	•	4,429 48	579 66	4,167 71	9,376 85	217 92	1,566 81	1,784 73	267 07	2.66	133 00
Hinsdale,	.	•	•	•	•	•	436 17	54 41	-	490 58	53 34	-	53 34	71 82	1.02	51 00
Holbrook,	.	•	•	•	•	•	999 46	32 31	-	1,081 77	18 46	-	18 46	53 91	1.75	32 31
Holden,	.	•	•	•	•	•	3,304 81	6,060 31	666 11	10,031 23	1,281 25	140 83	1,422 08	204 80	4.73	236 50

Table showing the Amounts expended for Repairs, Maintenance, etc.—Continued.

TOWN OR CITY.	AMOUNT EXPENDED.				EXPENDED PER MILE IN 1909.				Cost per Mile per Year.	Length under Main- tenance (Miles).	Amount to be assessed on Cities and Towns.
	To 1909.	In 1909 from Re- venue Ap- propriation.	In 1909 from Motor Vehicle Fees Fund.	Total.	From Revenue Appropriation.	From Motor Ve- hicle Fees Fund.	Total.	Cost per Mile per Year.			
Ulliston,	\$21.49	\$104.98	\$0.45	\$129.92	\$71.90	\$0.31	\$72.21	\$39.73	1.46	\$73.00	
Hudson,	164.19	77.25	10	241.54	67.76	.09	67.85	77.66	1.14	55.70	
Uintington,	7,638.03	21.39	183.59	7,843.01	9.51	81.60	91.11	455.45	2.25	21.39	
Upswich,	122.61	236.71	571.73	931.05	111.13	268.42	379.55	372.42	2.13	106.50	
Kingston,	257.84	179.10	-	436.94	175.59	-	175.59	131.61	1.02	51.00	
Lakeville,	960.17	173.68	-	1,142.85	48.65	-	48.65	44.54	3.57	173.68	
Uaneaster,	483.00	64.28	-	547.37	51.42	-	51.42	61.09	1.25	62.50	
Lawrence,	2,966.79	28.89	1.00	2,999.68	107.00	3.70	110.70	900.80	.27	13.50	
Lee,	11,522.07	2,734.41	3,169.65	17,426.13	524.84	608.38	1,133.22	422.34	5.21	260.50	
Leicester,	15,807.38	2,408.28	8,476.21	26,691.87	494.51	1,740.49	2,235.00	466.23	4.87	243.50	
Lenox,	10,527.77	6,868.83	5,570.38	22,966.98	896.71	727.20	1,623.91	641.53	7.66	383.00	
Uominster,	617.35	271.98	-	859.33	124.76	-	124.76	56.25	2.18	109.00	
Uexington,	15,459.63	589.67	900.96	16,980.26	137.45	210.01	347.46	312.34	4.29	214.50	
Lincoln,	7,527.73	411.18	299.82	8,235.73	198.64	144.84	343.48	310.54	2.07	103.50	
Littleton,	1,272.01	306.32	-	1,578.33	103.14	-	103.14	105.71	2.97	148.50	
Lowell,	13,485.35	813.59	196.14	14,498.06	353.73	85.28	439.01	534.98	2.30	115.00	
Uuenenburg,	5,784.31	209.96	-	6,084.27	110.28	-	110.28	254.36	2.72	136.00	
Uyn,	3,115.85	1,596.50	972.79	5,685.14	1,754.40	1,069.00	2,823.40	1,516.03	.91	45.50	

Mansfield,	.	340 72	80 94	-	421 66	66 89	-	66 89	63 50	1.21	60 50
Marion,	.	2,262 79	6,554 22	1,045 88	9,862 89	1,176 70	187 77	1,364 47	186 90	5.57	278 50
Marlborough,	.	5,397 91	3,790 99	223 33	9,412 23	598 89	35 28	634 17	224 95	6.33	316 50
Marshfield,	.	1,975 97	313 90	-	2,289 87	55 75	-	58 78	61 06	5.34	267 00
Mattapoisett,	.	1,408 33	1,558 91	266 49	3,294 33	485 64	83 01	568 65	101 86	3.21	160 50
Medford,	.	3 27	523 53	-	526 80	608 75	-	608 75	431 80	.86	43 00
Melrose,	.	200 91	19 51	-	220 42	48 77	-	48 77	179 20	.40	19 51
Merrimac,	.	1,440 57	166 68	90	1,608 15	78 62	42	79 04	82 09	2.12	106 00
Methuen,	.	3,977 92	162 57	50	4,140 99	44 05	13	44 18	153 31	3.69	162 57
Middleborough,	.	2,250 43	324 34	-	2,574 77	26 05	-	26 05	31 99	12.45	324 34
Milford,	.	127 91	163 80	-	291 71	69 11	-	69 11	40 34	2.37	81 90
Millbury,	.	767 06	529 98	-	1,297 04	177 84	-	177 84	75 32	2.93	149 00
Milton,	.	3,126 13	69 76	-	3,195 89	80 18	-	80 18	413 44	.87	43 50
Monson,	.	1,218 35	93 61	-	1,311 96	58 14	-	58 14	85 74	1.61	80 50
Montague,	.	1,381 28	265 31	-	1,646 59	61 55	-	61 55	65 62	4.31	215 50
Nantucket,	.	4,439 56	10,551 34	112 40	15,073 30	1,623 66	17 34	1,641 00	206 00	6.48	324 00
Natick,	.	767 04	348 19	84	1,116 07	108 78	26	109 04	55 94	3.20	160 00
Needham,	.	103 92	120 36	-	224 28	54 29	-	54 29	21 24	2.03	101 50
New Braintree,	.	195 41	36 03	-	231 44	90 07	-	90 07	72 77	.40	20 00
Newbury,	.	3,547 34	1,646 46	1,177 80	6,371 60	389 23	278 44	667 66	224 98	4.23	211 50
Newburyport,	.	1,796 84	5,376 48	232 26	7,405 58	3,072 27	132 72	3,204 99	376 49	1.75	87 50
Newton,	.	103 45	9 29	-	112 74	9 01	-	9 01	13 55	1.03	9 29
Norfolk,	.	1,031 58	502 60	2,594 61	4,128 79	346 62	1,789 45	2,136 07	219 03	1.45	72 50

HIGHWAY COMMISSION.

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Table showing the Amounts expended for Repairs, Maintenance, etc.—Continued.

TOWN OR CITY.	AMOUNT EXPENDED.			EXPENDED PER MILE IN 1909.			Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	To 1909.	In 1909 from Revenue Appropriation.	In 1909 from Motor Vehicle Fees Fund.	Total.	From Revenue Appropriation.	From Motor Vehicle Fees Fund.		
North Adams,	\$14,838 90	\$558 07	\$1,252 90	\$16,649 87	\$139 16	\$312 44	\$451 60	\$200 50
Northampton,	2,625 21	2,068 13	48 63	4,741 97	534 90	12 34	537 24	197 00
North Andover,	989 31	355 99	40	1,345 70	151 49	17	151 66	117 50
North Attleborough,	13,726 59	201 42	—	13,928 01	55 95	—	55 95	180 00
Northborough,	1,465 72	1,727 81	878 05	4,071 58	435 22	221 17	656 39	198 50
North Brookfield,	267 39	114 81	—	382 20	63 09	—	63 09	91 00
Northfield,	461 12	146 53	—	607 65	126 32	—	126 32	58 00
North Reading,	1,890 98	395 43	40	2,286 81	171 18	17	171 35	115 50
Norton,	1,186 06	198 69	—	1,384 75	98 85	—	98 85	240 82
Norwood,	5,221 47	1,623 28	1,343 43	8,188 18	791 84	655 32	1,447 16	330 30
Oak Bluffs,	4,427 08	2,058 28	248 46	7,633 82	1,248 22	104 83	1,353 05	236 63
Orange,	6,938 73	4,680 40	11 55	11,630 68	975 08	2 41	978 49	260 13
Orleans,	1,190 19	290 85	—	1,481 04	62 01	—	62 01	58 10
Oxford,	54 30	131 52	—	165 82	89 47	—	89 47	68 31
Palmer,	2,434 60	2,287 97	534 38	5,256 95	239 83	56 01	295 84	156 87
Paxton,	7,531 72	3,781 97	7,559 58	18,873 27	1,050 55	2,069 88	3,150 43	415 16
Pembroke,	240 21	127 12	—	367 33	363 20	—	363 20	280 40
Phillipston,	3,422 43	206 51	—	3,628 94	105 90	—	105 90	232 62

Pittsfield,	* * * * *	12,530 36	2,882 33	236 74	15,649 43	454 63	37 34	491 97	345 92	6 34	317 00
Plainville,	* * * * *	3,834 33	935 53	2,659 56	7,429 42	516 87	1,469 37	1,986 24	820 93	1.81	90 50
Plymouth,	* * * * *	4,897 72	446 36	-	5,344 08	75 27	-	75 27	94 92	5.93	296 50
Princeton,	* * * * *	937 20	90	-	938 10	40	-	40	54 25	2.23	90
Provincetown,	* * * * *	498 28	264 95	-	763 23	240 86	-	240 86	105 27	1.10	55 00
Quincy,	* * * * *	5,043 25	415 50	1,009 21	6,467 96	181 44	440 70	622 14	460 35	2.29	114 50
Randolph,	* * * * *	1,922 86	159 13	1,026 63	3,108 62	115 31	743 93	859 24	358 13	1.38	69 00
Raynham,	* * * * *	356 27	95 98	-	452 25	64 85	-	64 85	44 42	1.48	74 00
Reading,	* * * * *	5,081 85	2,550 26	453 29	8,085 40	681 89	121 20	803 09	320 84	3.74	187 00
Rehoboth,	* * * * *	1,864 76	393 42	-	2,258 18	65 24	-	65 24	63 59	6.03	301 50
Revere,	* * * * *	4,991 73	475 98	{ 33 86 { 3,390 87 }	8,892 44	380 78	2,739 78	3,120 56	718 87	1.25	62 50
Richmond,	* * * * *	2,904 14	217 50	-	3,121 64	54 10	-	54 10	114 89	4.02	201 00
Rochester,	* * * * *	2,101 13	99 56	-	2,200 69	18 89	-	18 89	70 58	5.27	99 56
Rockland,	* * * * *	422 96	421 46	-	844 42	179 34	-	179 34	75 59	2.35	117 50
Rockport,	* * * * *	136 77	119 65	-	256 42	127 29	-	127 29	70 06	.94	47 00
Rowley,	* * * * *	63 18	475 26	45 45	583 89	163 88	15 67	179 55	180 77	2.90	145 00
Russell,	* * * * *	13,794 79	3,363 21	550 95	17,708 95	504 99	82 73	587 72	221 75	6.66	333 00
Rutland,	* * * * *	283 36	270 18	-	553 54	232 91	-	232 91	119 29	1.16	58 00
Salem,	* * * * *	9 62	12 44	26 55	48 61	8 89	18 96	27 85	43 40	1.40	12 44
Salisbury,	* * * * *	1,042 98	82 29	906 76	2,032 03	57 55	634 10	691 65	337 54	1.43	71 50
Sandwich,	* * * * *	3,537 24	176 55	-	3,713 79	62 61	-	62 61	128 45	2.82	141 00
Saugus,	* * * * *	6,052 15	287 38	2,599 98	8,939 51	160 55	1,452 50	1,613 05	566 85	1.79	89 50

Table showing the Amounts expended for Repairs, Maintenance, etc.—Continued.

TOWN OR CITY.	AMOUNT EXPENDED.				EXPENDED PER MILE IN 1909.				Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	To 1909.	In 1909 from Revenue Appropriation.	In 1909 from Motor Vehicle Fees Fund.	Total.	From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.	Cost per Mile per Year.		
Situate,	\$2,060 08	\$407 45	—	\$2,467 53	\$86 88	—	\$86 88	\$88 88	4.69	\$234 50
Seekonk,	2,986 78	16 88	\$6 15	3,009 81	6 12	\$2.23	8 35	165 19	2.76	16 88
Sharon,	—	65 79	—	65 79	102 79	—	102 79	95 34	.64	32 00
Shelburne,	5,150 50	264 71	—	5,415 21	122 55	—	122 55	189 01	2.16	108 00
Shrewsbury,	24,630 70	1,948 26	2,490 70	29,119 66	400 88	512 49	913 37	587 68	4.86	243 00
Somerset,	11,529 86	667 23	591 82	12,788 91	96 70	85 77	182 47	211 59	6.90	345 00
Somerville,	—	400 19	—	400 19	344 99	—	344 99	357 31	1.16	58 00
Southampton,	102 52	139 77	—	242 29	211 77	—	211 77	89 74	.66	33 00
Southborough,	275 08	436 24	42 75	754 07	171 75	16 83	188 58	86 57	2.54	127 00
Southbridge,	897 21	87 97	4 00	989 18	64 68	2 94	67 62	128 13	1.36	68 00
South Hadley,	5,197 30	189 74	12,481 05	903 88	34 74	938 02	293 25	5.75	287 50	
Spencer,	1,446 17	2,757 08	774 23	4,977 48	1,129 95	317 31	1,447 26	303 69	2.44	122 00
Sterling,	1,481 99	482 22	—	1,964 21	130 68	—	130 68	103 81	3.69	184 50
Stockbridge,	1,806 59	309 28	610 25	2,726 12	93 72	184 91	278 63	510 51	3 30	165 00
Stoneham,	5,805 40	625 04	417 99	6,848 43	393 11	262 89	656 00	450 25	1.59	79 50
Stoughton,	1,055 18	958 15	737 91	2,751 24	290 35	223 61	513 96	167 35	3.30	165 00
Sturbridge,	579 50	45 32	—	624 82	26 35	—	26 35	58 39	1.72	45 32
Sudbury,	11,440 06	2,338 63	3,276 24	17,054 93	457 66	641 14	1,098 80	402 81	5.11	255 50

Sunderland,	.	.	.	.	548 36	90 98	-	639 34	-	58 32	-	85 24	-	1.56	78 00
Sutton,	.	.	.	.	2,279 17	250 52	-	2,529 69	109 88	-	109 88	145 71	2.28	114 00	
Swampscott,	.	.	.	.	2,921 01	949 42	762 58	4,633 01	637 19	511 80	1,148 90	302 81	1.49	74 50	
Swansea,	.	.	.	.	474 48	150 54	-	625 02	32 66	-	32 66	46 78	4.61	150 54	
Taunton,	.	.	.	.	3,902 64	276 60	34 80	4,214 04	59 23	7 45	66 68	113 16	4.67	233 50	
Templeton,	.	.	.	.	1,271 64	350 30	-	1,621 94	81 85	-	81 85	77 31	4.28	214 00	
Tewksbury,	.	.	.	.	1,063 27	393 46	3,724 64	5,181 37	59 89	566 92	626 81	139 58	6.57	328 50	
Tisbury,	.	.	.	.	1,824 33	101 22	-	1,925 55	52 45	-	52 45	69 61	1.93	96 50	
Townsend,	.	.	.	.	2,115 51	713 60	-	2,829 11	13 16	-	13 16	65 23	5.42	271 00	
Truro,	.	.	.	.	3,121 16	682 26	-	3,803 42	215 90	-	215 90	137 45	3.16	155 00	
Tynsborough,	.	.	.	.	3,378 12	505 30	-	4,443 42	117 28	-	117 28	120 30	4.82	241 00	
Uxbridge,	.	.	.	.	1,006 84	133 60	-	1,140 44	48 23	-	48 23	55 71	2.77	133 60	
Wales,	.	.	.	.	330 40	31 92	-	362 32	30 69	-	30 69	47 54	1.01	31 92	
Walpole,	.	.	.	.	5,467 55	2,541 65	6,898 96	14,908 19	559 83	1,519 59	2,079 42	279 76	4.54	227 00	
Ware,	.	.	.	.	1,474 32	683 43	-	2,157 75	234 86	-	234 86	99 84	2.91	145 50	
Wareham,	.	.	.	.	2,498 18	3,089 62	3,152 39	8,740 19	488 86	498 78	987 64	246 48	6.32	316 00	
Warren,	.	.	.	.	3,542 63	638 61	243 69	4,424 93	155 76	59 44	215 20	123 74	4.10	205 00	
Watertown,	.	.	.	.	3,354 98	184 67	3,101 38	6,641 03	217 26	3,648 68	3,865 94	593 47	.85	42 50	
Wayland,	.	.	.	.	6,083 09	4,306 10	476 66	10,865 85	1,669 03	184 75	1,553 78	457 51	2.58	129 00	
Webster,	.	.	.	.	-	130 49	50 43	180 92	200 75	77 58	278 33	190 44	.65	32 50	
Wellesley,	.	.	.	.	460 40	168 19	85	629 44	142 53	72	143 25	65 29	1.18	59 00	
Wellfleet,	.	.	.	.	2,338 67	619 56	5 20	2,963 43	133 24	1 11	134 35	126 37	4.65	232 50	
Wenham,	3,001 87	1,800 19	1,485 44	6,287 50	1,022 83	844 00	1,866 83	410 41	1.76	88 00	

HIGHWAY COMMISSION.

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Table showing the Amounts expended for Repairs, Maintenance, etc.—Concluded.

TOWN OR CITY.	AMOUNT EXPENDED.						EXPENDED PER MILE IN 1909.				Amount to be assessed on Cities and Towns.
	To 1909.	In 1909 from Re- venue Ap- propriation.	In 1909 from Motor Vehicle Fees Fund.	In 1909 from Motor Vehicle	Total.	From Revenue Appropriation.	From Motor Ve- hicle Fees Fund.	Total.	Cost per Mile per Year.	Length under Main- tenance (Miles).	
Westborough,	\$686 97	\$159 75	—	\$848 72	\$53 43	—	\$53 43	\$51 31	2.99	\$149 50	
West Boylston,	1,675 94	398 06	—	2,074 00	256 81	—	256 81	120 51	1.55	77 50	
West Bridgewater,	1,546 77	8,007 69	\$758 96	10,313 42	2,534 08	\$240 18	2,774 26	444 16	3.16	158 00	
West Brookfield,	1,471 64	405 49	47 88	1,925 01	151 30	17 86	169 16	101 74	2.68	134 00	
Westfield,	7,646 82	8,991 70	—	16,638 52	1,517 62	—	1,547 62	266 89	5.81	290 50	
Westford,	1,998 32	263 23	—	2,261 55	89 99	—	89 99	103 02	3.25	162 50	
Westminster,	15,048 66	660 42	1,860 08	17,569 16	125 79	351 30	450 09	365 26	5.25	262 50	
West Newbury,	5,171 04	6,181 59	249 29	11,601 92	1,212 08	48 88	1,260 96	343 65	5.10	255 00	
Weston,	5,546 00	1,541 31	1,829 04	8,916 35	489 30	580 65	1,069 95	283 05	3.15	157 50	
Westport,	9,904 41	343 39	—	10,247 80	80 80	—	80 80	189 21	4.25	212 50	
West Springfield,	1,550 40	3,907 37	1,099 86	6,557 63	2,045 74	575 84	2,621 58	373 01	1.91	95 50	
West Tisbury,	1,779 16	—	—	1,779 16	—	—	—	36 43	5.35	—	
Westwood,	1,712 03	21 56	338 52	2,072 11	20 53	322 40	342 93	211 43	1.05	21 56	
Weymouth,	6,732 00	793 01	—	7,525 01	121 63	—	121 63	191 81	6.52	326 00	
Whately,	1,686 79	5,204 05	633 14	7,523 98	1,317 48	160 29	1,477 77	311 42	3.95	197 50	
Whitman,	1,698 10	73 87	—	1,771 97	43 45	—	43 45	76 47	1.70	73 87	
Wilbraham,	3,459 73	802 50	186 67	4,448 90	166 49	38 73	205 22	104 53	4.82	241 00	
Williamsburg,	2,979 65	764 18	—	3,743 83	288 37	—	288 37	150 77	2.65	132 50	

Williamstown,	.	.	.	.	7,143 80	194 37	1,412 85	8,751 02	93 00	676 00	769 00	370 64	2.09	104 50
Wilmington,	.	.	.	.	24 58	26 47	747 17	798 22	22 62	638 61	661 23	455 74	1.17	26 47
Winchester,	.	.	.	.	3,115 83	614 65	-	3,730 48	313 60	-	313 60	190 49	1.96	98 00
Winchendon,	.	.	.	.	30 72	53 41	-	84 13	31 42	-	31 42	35 49	1.70	53 41
Windsor,	.	.	.	.	693 97	22 05	-	716 02	11 85	-	11 85	81 27	1.86	22 05
Woburn,	.	.	.	.	1,980 20	399 11	-	2,379 31	196 61	-	196 61	151 16	2.03	101 50
Worcester,	.	.	.	.	7,593 04	6,393 31	2,802 42	16,789 27	1,563 28	685 19	2,248 47	460 99	4.09	204 50
Wrentham,	.	.	.	.	4,080 16	1,580 71	1,696 22	7,357 09	386 48	414 72	801 20	135 21	4.09	204 50
Yarmouth (north),	.	.	.	.	3,594 68	395 09	-	3,989 77	106 49	-	106 49	81 25	3.71	185 50
Yarmouth (south),	.	.	.	.	6,117 01	432 15	-	6,549 19	84 90	-	84 90	102 87	5.09	254 50

APPENDIX G.

STATEMENT SHOWING THE NUMBER OF PETITIONS RECEIVED
AND THE LENGTH PETITIONED FOR, THE LAY-OUTS MADE
AND THEIR LENGTH AND DISTRIBUTION IN THE VARIOUS
COUNTIES OF THE COMMONWEALTH.

COUNTIES.	PETITIONS RECEIVED.				PETITIONS SITUATED IN —			LAY-OUTS MADE IN —			Number of Lay-outs.	
	County.	City.	Town.	Totals.	Cities.	Towns.	Totals.	Cities.	Towns.	Totals.		
Barnstable,	.	.	-	-	44	44	-	15	15	14	14	97
Berkshire,	.	.	15	11	53	79	2	25	27	15	17	90
Bristol,	.	.	2	6	44	52	2	17	19	1	17	89
Dukes,	.	.	2	-	5	7	-	5	5	-	5	24
Essex,	.	.	3	21	57	81	7	25	32	7	17	109
Franklin,	.	.	1	-	55	56	-	17	17	-	13	82
Hampden,	.	.	4	5	31	40	3	17	20	1	11	77
Hampshire,	.	.	1	6	45	52	2	17	19	1	12	73
Middlesex,	.	.	13	22	94	129	9	42	51	7	32	149
Nantucket,	.	.	-	-	1	1	-	1	1	-	1	14
Norfolk,	.	.	2	5	50	57	1	24	25	1	21	84
Plymouth,	.	.	-	7	61	68	1	24	25	1	19	116
Suffolk,	.	.	-	2	6	8	2	2	4	2	1	3
Worcester,	.	.	-	9	143	152	2	55	57	2	43	232
Totals, .	.	.	43	94	689	826	31	286	317	25	221	1241

NUMBER OF PETITIONS RECEIVED, ETC. — *Concluded.*

COUNTIES.	LENGTHS PETITIONED FOR.		LENGTHS LAID OUT.					
	Feet.	Miles.	1894-1908.		1909.		TOTALS.	
			Feet.	Miles.	Feet.	Miles.	Feet.	Miles.
Barnstable, .	692,667	131.19	432,549	81.93	32,172	6.09	464,721	88.01
Berkshire, .	761,227	144.17	294,291	55.74	9,071	1.72	303,362	57.46
Bristol, .	784,271	148.54	299,527	56.74	14,540	2.75	314,067	59.49
Dukes, .	121,043	22.92	82,799	15.68	7,300	1.38	90,100	17.06
Essex, .	1,125,110	213.09	289,328	54.80	26,871	5.09	316,199	59.89
Franklin, .	593,139	112.34	201,540	38.16	10,677	2.02	212,217	40.18
Hampden, .	648,350	122.79	243,564	46.13	12,050	2.28	255,618	48.41
Hampshire, .	533,328	101.01	177,409	33.60	9,386	1.78	186,795	35.38
Middlesex, .	1,620,647	306.94	543,542	102.94	9,854	1.87	553,396	104.81
Nantucket, .	34,185	6.47	34,211	6.48	-	-	34,211	6.48
Norfolk, .	698,511	132.30	273,562	51.81	4,749	.90	278,311	52.71
Plymouth, .	1,041,530	197.26	416,239	78.84	18,486	3.50	434,725	82.33
Suffolk, .	65,615	12.43	19,016	3.60	-	-	19,016	3.60
Worcester, .	1,857,070	351.71	643,305	121.84	37,692	7.14	681,002	128.98
Totals, .	10,576,693	2,003.16	3,950,882	748.27	192,852	36.53	4,143,740	784.79

APPENDIX H.

TABLE SHOWING THE WORK DONE UNDER THE "SMALL TOWN" ACT SINCE ITS PASSAGE IN 1900.
 [Section 17, Chapter 47, Revised Laws, and Chapter 279, Acts of 1908.]

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	
<i>Barnstable County.</i>							
Eastham,	•	•	\$196 00	\$400 00 ¹	\$596 00	1,150	Graded only.
Mashpee,	•	•	400 00	—	400 00	—	—
Provincetown,	•	•	5,035 56	—	5,035 56 ²	9,930	Macadam.
Wellfleet,	•	•	1,653 00	—	1,653 00	2,250	Broken stone and clay.
			\$7,344 56	\$400 00	\$7,744 56	13,330	—
<i>Berkshire County.</i>							
Alford,	•	•	\$869 00	\$400 00	\$1,269 00	3,363	4,663
Becket,	•	•	—	500 00 ²	500 00	—	1,250
Egremont,	•	•	2,396 00	550 00	2,946 00	5,106	2,350
Florida,	•	•	2,636 00	650 00	3,286 00	4,300	1,000
Lanesborough,	•	•	2,502 00	450 00	2,952 00	4,614	900
						5,514	Gravel road and steel concrete bridge.

¹ Work not yet begun.² Town contributed an equal amount.

WORK DONE UNDER THE "SMALL TOWN" ACT — *Continued.*

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	
Berkshire County — Con.							
Monterey,	\$1,918.00	\$600.00	\$2,518.00	10,720	1,300	12,020	Gravel and culverts.
Mount Washington,	1,392.00	400.00	1,792.00	2,080	700	2,780	Gravel road and bridge repairs.
New Ashford,	561.00	400.00 ¹	961.00	2,600	—	2,600	Gravel road and culvert construction and repairs.
New Marlborough,	5,328.00	—	5,328.00	17,750	—	17,750	Gravel.
Otis,	2,368.00	600.00 ²	2,968.00	8,000	2,000	10,000	Gravel road and culvert repairs.
Peru,	1,391.00	600.00	1,991.00	6,795	1,550	8,345	Gravel.
Sandisfield,	5,860.00	500.00 ^{1,2}	6,360.00	14,203	—	14,203	Macadam.
Savoy,	3,540.00	575.00	4,115.00	8,350	850	9,200	Gravel.
Sheffield,	5,088.00	1,400.00	6,488.00	10,032	1,650	11,682	Grading and gravel.
Tyringham,	2,565.00	200.00 ^{1,2}	2,765.00	4,663	—	4,663	Grading and macadam.
Washington,	2,898.00	600.00	3,498.00	6,320	1,250	7,570	Grading and gravel.
West Stockbridge,	4,976.00	—	4,076.00	9,550	—	9,550	Gravel.
Windsor,	—	500.00	500.00 ²	—	580	580	Macadam.
Bristol County.							
Easton,	\$85,388.00	\$8,925.00	\$94,313.00	118,446	16,680	135,126	
Norton,	\$12,000.00	—	\$12,000.00 ²	31,636	—	31,686	Macadam.
Westport,	4,176.00	—	4,176.00	7,950	1,900 ³	9,850	Macadam.
	—	\$3,400.00	3,400.00 ²	—	6,150	6,150	Macadam.
	\$16,176.00	\$3,400.00	\$19,576.00	39,636	3,050	47,686	

Dukes County.		Essex County.		Franklin County.	
Gay Head,		-	\$400 00 ¹	\$400 00	
Boxford,	.	\$1,061 00	-\$1,061 00 ²	9,930	9,930 Gravel.
Danvers,	.	3,000 00	-\$2,000 00 ⁴	4,000	4,000 Gravel.
Essex,	.	932 00	-\$32 00 ²	22,000	22,000 Gravel and repairs.
Georgetown,	.	2,150 00	-\$400 00	7,037	9,597 Gravel and macadam.
Marblehead,	.	3,800 00	-\$4,000 00	5,500	11,008 Macadam.
Middleton,	.	2,244 00	-\$400 00	6,700	8,250 Gravel.
North Andover,	.	-	-\$500 00	-	2,250 Gravel.
Salisbury,	.	1,948 00	-\$	2,150	2,150 Macadam.
Swampscott,	.	2,925 00	-\$	5,200	5,200 Macadam.
Topsfield,	.	3,484 00	-\$500 00 ^{1,2}	20,575	20,575 Gravel.
	\$21,544 00	\$7,800 00	\$29,344 00	\$3,092	11,868 94,950
Essex County.					
Bernardston,	.	\$1,615 00	\$600 00	\$2,665 00	10,700 2,100 12,800 Gravel.
Charlemont,	.	1,000 00	-\$	1,000 00	- 1,754 3 1,754 Gravel.
Conway,	.	4,353 00	-\$	4,352 00	8,010 8,010 Gravel.
Gill,	.	1,912 00	-\$500 00	2,412 00	6,450 1,900 8,350 Gravel road and bridge repairs.
Hawley,	.	1,397 00	-\$550 00	1,947 00	4,400 1,700 6,100 Grading and gravel.
Heath,	.	2,227 00	-\$500 00	2,727 00	4,983 1,150 6,133 Gravel.

WORK DONE UNDER THE "SMALL TOWN" ACT—Continued.

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	
<i>Franklin County -- Con.</i>							
Levertitt,	.	.	\$3,776 00	\$4,326 00	9,607	1,722	11,329 Gravel.
Leyden,	.	.	2,793 00	—	10,700	—	10,700 Gravel.
Monroe,	.	.	2,098 00	600 00	2,698 00	4,250	600 4,850 Gravel.
New Salem,	.	.	3,152 00	400 00	3,552 00	4,080	4,657 ¹ 8,737 Gravel.
Rowe,	.	.	2,173 00	550 00	2,723 00	6,210	1,000 7,210 Gravel.
Shutesbury,	.	.	2,134 00	600 00	2,734 00	6,600	2,150 8,750 Gravel.
Warwick,	.	.	3,220 00	1,100 00 ²	4,320 00	6,450	— 6,450 Gravel.
Wendell,	.	.	4,488 00	750 00	5,233 00	9,050	1,150 10,200 Grading and gravel.
			\$36,387 00	\$6,700 00	\$43,087 00	91,490	19,883 111,373
<i>Hampden County.</i>							
Blandford,	.	.	\$3,444 00	\$1,000 00 ³ ⁴	\$4,444 00	8,400	— 8,400 Grading and gravel.
East Longmeadow,	.	.	680 00	—	680 00	2,850	— 2,850 Gravel.
Granville,	.	.	4,223 00	—	4,223 00	7,197	— 7,197 Grading and gravel.
Hampden,	.	.	3,008 00	400 00	3,408 00	29,400	2,150 31,550 Gravel.
Holland,	.	.	164 00	—	164 00	425	— 425 Grading.
Longmeadow,	.	.	1,200 00	—	1,200 00 ⁴	1,425	— 1,425 Macadam and 128 feet of concrete cul-
Montgomery,	.	.	1,020 00	400 00	1,420 00	2,450	650 3,100 Gravel.

Russell,	-	-	-	-	1,000 00 ³	1,000 00 ⁴	-	-	-	-
Southwick,	-	-	-	-	1,928 00	1,100 00	3,028 00	5,750	6,050	11,800
Tolland,	-	-	-	-	2,542 16	600 00	3,142 16	4,100	1,400	5,500
					\$18,209 16	\$4,500 00	\$22,709 16	61,997	10,250	\$72,247
<i>Hampshire County.</i>										
Amherst,	-	-	-	-	\$2,900 00	\$1,900 00	\$4,800 00 ⁴	2,260	2,175	4,435
Chesterfield,	-	-	-	-	2,920 00	400 00	3,320 00	4,125	400	4,525
Cummington,	-	-	-	-	3,083 00	550 00	3,633 00	7,895	700	8,595
Enfield,	-	-	-	-	2,664 00	1,650 00	4,314 00	18,310	5,300	23,610
Greenwich,	-	-	-	-	976 00	700 00	1,676 00	1,200	1,700	2,900
Huntington,	-	-	-	-	-	800 00 ⁴	800 00	-	2,175 ⁵	2,175
Middlefield,	-	-	-	-	1,260 00	450 00	1,710 00	2,700	1,500	4,200
Pelham,	-	-	-	-	2,470 00	-	2,470 00	3,700	1,600 ⁶	5,300
Plainfield,	-	-	-	-	2,380 00	400 00 ³	2,780 00	3,866	-	3,866
Prescott,	-	-	-	-	2,130 00	600 00	2,730 00	3,660	850	4,510
Southampton,	-	-	-	-	-	500 00 ³	500 00 ⁴	-	-	-
Westhampton,	-	-	-	-	3,059 00	-	3,059 00	9,743	-	9,743
Worthington,	-	-	-	-	4,327 00	1,700 00 ⁷	6,027 00	6,850	700	7,550
<i>Middlesex County.</i>										
Ayer,	-	-	-	-	\$28,169 00	\$9,650 00	\$37,819 00	64,309	17,100	\$1,409
Belmont,	-	-	-	-	\$4,000 00	-	\$4,000 00	17,600	-	17,600
					2,300 00	-	2,300 00 ⁴	5,237	-	5,237

¹ Includes 3,507 feet built with 1908 allotment.² Work begun but not completed.³ Work not yet begun.⁴ Town contributed an equal amount.⁵ Slight repairs also made on 7½ miles.⁶ Built with 1908 allotment.⁷ \$1,000 not yet contracted for; town also contributed \$1,000.

WORK DONE UNDER THE "SMALL TOWN" ACT — *Continued.*

TOWNS,	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	
<i>Middlesex County — Con.</i>							
Billerica,	\$3,484 00	\$2,500 00 ¹	\$5,984 00 ²	4,700	—	4,700	Macadam.
Burlington,	—	2,500 00 ³	2,500 00 ²	—	—	—	—
Carlisle,	1,836 00	—	1,836 00	13,150	—	13,150	Gravel.
Dunstable,	1,399 00	—	1,399 00	8,150	—	8,150	Gravel.
Hudson,	3,000 00	—	3,000 00 ²	10,857	—	10,857	Graded only.
Littleton,	1,012 00	1,000 00 ³	2,012 00 ²	4,492	—	4,492	Gravel.
Maynard,	9,383 89	—	9,383 89 ²	15,233	—	15,233	Grading, macadam and bridge repairs.
North Reading,	—	3,000 00	3,000 00 ²	—	6,500	6,500	Macadam.
Pepperell,	1,000 00	—	1,000 00 ²	2,550	1,500 ⁴	4,050	Gravel.
Reading,	1,132 00	1,000 00	2,132 00 ²	2,050	900	2,950	Macadam.
Sherborn,	4,558 00	500 00	5,058 00 ²	19,100	8,000	27,100	Gravel.
Shirley,	3,834 00	1,000 00 ²	4,834 00	10,350	9,700	20,050	Gravel.
Stow,	3,145 00	—	3,145 00	6,800	—	6,800	Gravel.
Wakefield,	5,150 00	—	5,150 00 ²	6,986	—	6,986	Macadam.
Westford,	2,366 30	—	2,366 30 ²	5,400	—	5,400	Gravel.
	\$47,600 19	\$11,500 00	\$59,100 19	132,655	26,600	159,255	

Avon,	.	.	.	.	.	\$2,569 00	\$400 00	\$2,969 00	7,835	455	8,290	Gravel and macadam.
Bellingham,	.	.	.	.	.	1,412 00	-	1,412 00	2,750	-	2,750	Macadam.
Medfield,	.	.	.	.	.	1,040 00	-	1,040 00 ²	720	-	720	Macadam.
Medway,	.	.	.	.	.	4,828 00	-	4,828 00 ²	11,256	-	11,256	Macadam.
Millis,	.	.	.	.	.	3,036 00	1,000 00 ¹	4,036 00	3,600	2,800 ⁵	6,400	Gravel.
						\$12,885 00	\$1,400 00	\$14,235 00	26,161	3,255	29,416		
<i>Plymouth County.</i>													
Abington,	.	.	.	.	.	-	\$1,600 00	\$1,600 00 ²	-	3,500	3,500	Macadam.
Carver,	.	.	.	.	.	\$10,090 00	1,900 00	11,990 00 ²	31,194	5,445	36,639	Macadam.
East Bridgewater,	.	.	.	.	.	4,142 87	-	4,142 87 ²	6,250	-	6,250	Macadam.
Halifax,	.	.	.	.	.	2,304 00	500 00 ³	2,804 00	5,275	-	5,275	Macadam.
Hanover,	.	.	.	.	.	2,365 00	-	2,365 00 ²	2,827	-	2,827	Macadam.
Hanson,	.	.	.	.	.	7,992 00	1,000 00	8,992 00 ²	22,984	3,215	26,199	Macadam.
Lakeville,	.	.	.	.	.	700 00	-	700 00	2,640	-	2,640	Macadam.
Norwell,	.	.	.	.	.	2,080 00	-	2,080 00 ²	8,980	-	8,980	Gravel.
Pembroke,	.	.	.	.	.	2,848 00	1,700 00	4,548 00	20,471	8,000	28,471	Gravel.
Plymouth,	.	.	.	.	.	-	1,000 00 ¹	1,000 00 ²	-	-	-	Sand and oil.
Plympton,	.	.	.	.	.	1,817 00	400 00	2,217 00	12,518	2,135	14,653	Gravel.
Rochester,	.	.	.	.	.	4,500 00	-	4,500 00	19,027	-	19,027	Macadam.
						\$38,841 87	\$8,100 00	\$46,941 87	132,166	22,205	154,461		

1 Work begun but not completed.

2 Town contributed an equal amount.

3 Work not yet begun.

⁴ Built with balance of 1906 allotment.

Built with 1908 allotment.

WORK DONE UNDER THE "SMALL TOWN" ACT — Concluded.

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	
<i>Worcester County.</i>							
Ashburnham,	\$3,144 00	\$500 00 ¹	\$3,644 00	4,750	850	5,600	Gravel.
Berlin,	3,224 00	400 00	3,624 00	10,375	2,508	12,883	Gravel.
Bolton,	3,614 00	600 00	4,214 00	19,135	3,700	22,835	Gravel.
Boyiston,	1,560 00	800 00	2,360 00	5,100	3,430	8,530	Gravel.
Brookfield,	900 00	—	900 00	2,500	—	2,500	Macadam.
Dana,	2,069 00	800 00	2,869 00	5,450	1,925	7,375	Gravel.
Hubbardston,	3,085 00	—	3,085 00	6,655	—	6,655	Gravel.
Mendon,	3,464 00	—	3,464 00	16,675	—	16,675	Gravel and repairs.
New Braintree,	—	450 00	450 00	—	—	—	Macadam.
Oakham,	2,918 00	500 00	3,418 00	8,210	1,200	9,410	Gravel and macadam.
Oxford,	800 00	800 00	1,600 00 ¹	3,050	3,150	6,200	Gravel.
Petersham,	5,960 00	1,000 00 ²	6,960 00	6,135	2,500 ³	8,635	Gravel.
Rutland,	1,894 00	—	1,894 00	2,581	—	2,581	Gravel and macadam.
Southbridge,	6,400 00	—	6,400 00 ¹	2,933	—	2,933	Vitrified paving brick (paved).
Winchendon,	4,000 00	—	4,000 00 ¹	9,210	—	9,210	Gravel.
	\$42,942 00	\$5,850 00	\$48,792 00	102,110	20,663	122,782	

¹ Town contributed an equal amount.² Work not yet begun.³ Built with 1908 allotment.

SUMMARY.

COUNTIES.	ALLOTMENTS.			LENGTHS BUILT (FEET).		
	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.	Previous to 1909.	In 1909.	Total to Nov. 30, 1909.
Barnstable,	\$7,344 56	\$400 00	\$7,744 56	13,330	-	13,330
Berkshire,	45,388 00	8,925 00	54,313 00	118,446	16,650	135,126
Bristol,	16,176 00	3,400 00	19,576 00	39,636	8,050	47,686
Dukes,	-	400 00	400 00	-	-	-
Essex,	21,544 00	7,800 00	29,344 00	83,092	11,868	94,960
Franklin,	36,387 00	6,700 00	43,087 00	91,480	19,883	111,373
Hampden,	18,209 16	4,500 00	22,709 16	61,997	10,250	72,247
Hampshire,	28,169 00	9,950 00	37,819 00	64,399	17,100	81,409
Middlesex,	47,600 19	11,500 00	59,100 19	132,655	26,600	159,255
Norfolk,	12,885 00	1,400 00	14,285 00	26,161	3,255	29,416
Plymouth,	38,841 87	8,100 00	46,941 87	132,166	22,295	154,461
Worcester,	42,942 00	5,550 00	48,792 00	102,119	20,663	122,782
	\$315,486 78	\$68,325 00	\$384,111 78	865,401	156,644	1,022,045

APPENDIX I.

RELATING TO THE PLANTING AND CARE OF SHADE TREES.

REPORT OF MR. F. W. RANE, STATE FORESTER.

BOSTON, MASS., Dec. 31, 1909.

Hon. HAROLD PARKER, *Chairman, Massachusetts Highway Commission,
15 Ashburton Place, Boston, Mass.*

DEAR SIR:—I submit herewith a brief report concerning the work done against the gypsy and brown-tail moths on State highway trees under the direction of this department during the past year.

The work has been carried on by this department as in previous years, and it has been given as much attention as possible. Also, we have endeavored to do the necessary work against the elm-leaf beetle. It has not been necessary during this year's campaign to do as much thinning on the State highways as in previous years. We have also been very fortunate in getting the federal authorities to take up some work on State highways that has helped us considerably, and has been no expense to the Commonwealth. The elm-leaf beetle problem has been a serious one the past year, and possibly has not been given as much attention as it should have had, as the infestation in some cases was new and unexpected. In the coming year we feel that it will be necessary to have larger appropriation if the elm-leaf problem is to be cared for properly, and it should be taken up at an early date, as part of the infestation occurs in cities and towns where we are doing very little spraying for the gypsy moth. The work of destroying the gypsy moth egg clusters and removing the brown-tail webs has been nearly completed at the present time, although there are a few remaining miles of road to be done in the near future.

We also wish to recommend the removal, if possible, by the State Highway Commission, of some of the trees on the highways where they are in large numbers,—more than are needed for good shade.

Work was done at a total cost of \$5,079.56 on the State highways in the following towns and cities:—

Abington.	Harwich.	Scituate.
Acton.	Haverhill.	Shrewsbury.
Amesbury.	Hudson.	Southborough.
Ashland.	Kingston.	Stoneham.
Barnstable.	Lancaster.	Stoughton.
Bedford.	Leominster.	Sudbury.
Bellingham.	Lunenburg.	Swampscott.
Bourne.	Marlborough.	Taunton.
Boxborough.	Marshfield.	Tewksbury.
Bridgewater.	Melrose.	Townsend.
Brewster.	Merrimac.	Truro.
Brockton.	Methuen.	Tyngsborough.
Chatham.	Middleborough.	Walpole.
Chelmsford.	Natick.	Watertown.
Cohasset.	Needham.	Wellesley.
Concord.	Newbury.	Wellfleet.
Dracut.	Newburyport.	Wenham.
Duxbury.	Norfolk.	West Bridgewater.
Falmouth.	Northborough.	Westborough.
Foxborough.	Orleans.	Westford.
Framingham.	Pembroke.	Weston.
Franklin.	Plainville.	Westwood.
Gloucester.	Quincy.	Weymouth.
Groton.	Raynham.	Winchester.
Hamilton.	Reading.	Wrentham.
Hanover.	Rockland.	Yarmouth.
Harvard.	Salisbury.	

Yours very truly,

F. W. RANE,

State Forester.

REPORT OF FORESTER OF HIGHWAY COMMISSION.

CLINTON, MASS., Dec. 10, 1909.

To the Massachusetts Highway Commission.

GENTLEMEN:—At the beginning of the year all trees growing within the limits of the State highway were given to the forester to care for; this included many large trees that had received little or no attention for several years. Without any additional appropriation this work has been carried on.

A large number of dead and worthless trees have been removed, also many dead branches. The growth of brush on the curves has been removed or thinned back to the location line, to aid automobilists in seeing the road as far ahead as possible.

In the early part of the season trees were found that had been injured by the feed wires of the electric street railways. The companies were asked to protect their wires, which they have done, and as a result many trees have been saved an early death.

The telephone and electric light companies have done tree trimming under the direction of the forester, in the interest of the trees. Wild cherry and neglected fruit trees have been removed, as their chief value was the harboring of insect pests.

Owing to our limited appropriation, the native growth, consisting of tree seedlings and sprouts, has received but little attention. In this work there is much that ought to be done to help materially in coming years.

The young trees that have been planted have done as well as the season would allow. Owing to the extreme drought, it was necessary to water some of them, and as a result they came through in very good condition. Our loss during the year has been a little less than 6 per cent., due in most cases to conditions beyond our control.

In order to reduce the number of weeds that naturally grow about the planted trees, the dressing this year was placed under the roots of the newly planted trees, instead of over them as a mulch, as previously done. To further aid in keeping a neat appearance, an experiment was made in Chester of sowing white clover seed around the tree to crowd out the weeds; later this is to be dug into the soil for its fertilizing value.

The trees in the nursery did well during the summer. A large proportion of these are young trees that will be used for planting a few years hence.

New trees planted in 1909,	. . . . .	730
Total trees planted in six years,	. . . . .	13,666
Trees replaced in 1909,	. . . . .	794
Trees on hand in nursery,	. . . . .	1,070
Small trees on hand in nursery,	. . . . .	4,084
Total number of towns in which trees have been planted,	. . . . .	58
Number of towns in which native trees have been trimmed in 1909,	. . . . .	43
Number of towns in which trees have been inspected in 1909,	. . . . .	163

The average cost of new planting in 1909 was \$0.74 each, to which should be added the cost of preparing the ground last year, \$0.49 each, making the total cost \$1.23 each.

The cost of maintenance this year was \$0.22 per tree.

Respectfully submitted,

E. W. BREED,

Forester.

VARIETIES AND DISTRIBUTION OF SHADE TREES PLANTED IN 1909.

Trees replaced.

VARIETIES AND DISTRIBUTION OF SHADE TREES PLANTED IN 1909 —
Concluded.

New Planting.

TOWN OR CITY.	American Elm.	Norway Maple.	Sugar Maple.	English Ash.	American Ash.	Russian Willow.	Totals.
Chester,	164	—	—	30	24	5	223
Dennis,	6	—	—	—	—	—	6
Easthampton (north),	—	102	—	—	—	—	102
Easthampton (south),	—	—	120	—	—	—	120
Huntington,	7	—	6	24	—	—	37
Northampton (south),	17	57	33	—	—	18	125
Northampton (Smith's Ferry),	—	—	—	50	67	—	117
Totals,	194	159	159	104	91	23	730

In addition to the above, 119 seedling ash have been planted in 6 towns.

On hand in nursery Dec. 1, 1909: large trees: American elms, 365; Norway maples, 40; white maples, 4; American Ash, 89; red oak, 25; laurel-leaf willows, 85; American lindens, 49; black locusts, 18; Scotch elms, 52; sugar maples, 18; ash-leaf maples, 25; English ash, 173; English oak, 5; Russian willows, 85; tulip, 22; white poplars, 15; total, 1,070.

Small trees: American elms, 865; green ash, 299; pin oak, 125; American linden, 99; laurel-leaf willows, 108; white ash, 2,156; scarlet oak, 89; white maple, 282; Russian willow, 61; total, 4,084.

APPENDIX J.

RELATING TO THE WORK OF THE AUTOMOBILE DEPARTMENT.

Statement showing the Number of Registration Certificates and Licenses to operate issued during the Fiscal Year 1909, also the Fees received for the same, together with the Fees for Examinations of Professional Chauffeurs and for Copies of Certificates of Registration and Licenses, etc.

Certificates of registration:—

Automobiles,	23,971 at \$5 00	\$119,855 00
Motor cycles,	2,394 at 2 00	4,788 00
Manufacturers or dealers,	491 at 15 00	7,365 00

Licenses to operate:—

Private operators,	8,336 at 2 00	16,672 00
Professional chauffeurs,	3,289 at 2 00	6,578 00
Renewals,	6,626 at 50	3,313 00

Examinations,	4,630 at 2 00	9,260 00
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Copies of certificates and licenses furnished,	1,807 at 50	903 50
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Receipts from other sources, viz., interest on deposits, motor vehicle signs, and rebates on empty tar and oil barrels,	1,239 04
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Total receipts for the year,	\$169,973 54
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REPORT OF EXAMINERS AND INVESTIGATORS.

AUSTIN B. FLETCHER, *Secretary, Massachusetts Highway Commission.*

DEAR SIR:—The examiners and investigators beg to submit the following as their third annual report, covering the period from Dec. 1, 1908, to Dec. 1, 1909. Statistical tables containing the data for this department are handed you herewith.

Examinations.

Examinations of applicants for professional licenses have been conducted during the past year in 16 different cities within the borders of the Commonwealth, and once, by request, in Pawtucket, R. I. Special examinations have been held in Concord, Easthampton, Greenfield, Holyoke, Lawrence and Rockport. Regular appointments have been made, as in the two previous years, in 9

cities of the Commonwealth besides Boston. The examinations held in Boston have been conducted by F. L. Austin and C. G. Hubbell; those in Fitchburg, Brockton, New Bedford, Fall River, Lowell and Salem by C. G. Hubbell; those in Pittsfield, Springfield and Worcester by A. F. Foote. Mr. William MacConnell has from time to time examined applicants in the several cities mentioned, as occasion demanded. The number of applicants from Springfield and vicinity have so increased that during the summer months one examiner was obliged to devote a whole day to meeting the applicants in that city, while another examiner went to Worcester.

The nature of the examinations has changed in two respects. The written part of the examination has been shortened and hence made easier than heretofore, but the road test has been more severe. About April 1 the examination paper formerly used, which consisted of twenty-five questions, was discontinued, and a paper half as long, consisting of nine questions relating to the laws and three relating to the mechanical control and proper operation of a motor vehicle, was substituted. Moreover, instead of using the same paper day after day, a series of six papers was adopted, including one for operators of steam-propelled vehicles. Each week a different paper in the series is used, so that an applicant on the second or subsequent examination seldom, if ever, has the same questions to answer. This has done away almost entirely with that learning and answering questions by rote which was so evident among a certain class of applicants last year. This change was made, furthermore, in order to bring about in the examinations what may be termed a change of emphasis. It was felt that the written part, although not very exacting, was too long, and had the effect of preventing some men from obtaining licenses, although they were thoroughly competent operators. The written part, therefore, was shortened, and the percentage and standard for the road test were raised.

The adoption by the Boston board of street commissioners, on Jan. 1, 1909, of their "Street Traffic Regulations and Rules for Driving" has tended to make the examiners more strict in observing how applicants obey those regulations, especially with reference to passing electric cars that had stopped to allow passengers to alight; also as to their consideration for other vehicles and pedestrians, and as to making crossings and turning corners properly. Whenever an applicant has failed in the road test an effort has been made to give, on the back of his examination paper, the specific reasons why he failed. This plan has worked out well in satis-

fying the minds of those who have complained because they did not pass; but, in general, it may be said that the applicants admit the justice of the examiners' decisions, and in more than one instance they have afterwards even expressed their thanks to the examiner for requiring of them more road experience.

In comparison with the figures of last year, the following special features may be noted:—

	1908.	1909.
Total number of persons examined,	2,666	3,473
Total number of examinations,	3,290	4,629
Per cent. examined in Boston,	59.30	56.58
Per cent. failed Part I. on first examination, . .	11.25	9.93
Per cent. failed Part II. on first examination, . .	16.15	21.68
Total number persons passed,	2,379	3,149
Total number persons failed to receive license, .	287	324
Total per cent. failed to receive a license, . .	10.76	9.33
Total number failed on first examination, . .	730	1,098
Total per cent. failed on first examination, . .	27.38	31.61
Total number failures on Part II.,	559	1,044

As already stated, the written examination, or Part I., has been simplified, which accounts for the small percentage of 9.93 failing on that part in 1909, as against 11.25 per cent. in 1908; and this, as plainly shown in the sequel, accounts for the smaller total percentage of failures this year than last,— 10.76 in 1908 and 9.33 in 1909. It will be observed, however, that while only 27.38 per cent. failed on their first examination (including both Part I. and Part II.) in 1908, 31.61 per cent. failed in 1909. More striking is the higher percentage of failures in the first road test this year as compared with last,— 16.15 in 1908 and 21.68 in 1909. Still more significant is the fact that while the whole number of examinations has increased over 40 per cent., the number of failures in the

road test during 1909 has increased very nearly 87 per cent. The number of persons examined shows a 33 per cent. increase, and out of the total number of applicants, 324 gave up the attempt to become chauffeurs and failed to receive licenses. There is reason to believe that the applicants now come better prepared for the examination than they did last year, and it seems to be the general impression in automobile circles that it is now more difficult to obtain a Massachusetts license than ever before.

The condition of the vehicles in which the applicants present themselves for the road test is a subject that calls for comment. During the year the examiners have refused a number of times to accept for demonstration automobiles which were unfit to be operated and a menace to the public safety. There has been some improvement in this respect, but notwithstanding the ample notice they receive to furnish an automobile which is in good running order, and with which they are familiar, many still come with old, almost broken-down cars, lacking adequate brakes, a muffler, horn or some other essential part of their equipment. In this connection may be mentioned the case of those applicants who come with either large trucks or small pleasure vehicles propelled by electric power. The examiners favor the restriction of the licenses issued in such cases to the operation of electric vehicles only. The examiners have already recommended in some instances that this be done, and they would now recommend that this be done in future (under the authority granted in the automobile law for 1909) more than has been done in the past.

A further movement in the direction of restriction seems desirable in cases where applicants fail to pass. At present a lapse of two weeks is required between the first, the second and third road tests, and where an applicant on the third examination shows no improvement, and that he is a dangerous operator, it has been the policy of the department to refuse to give him another examination for three months. We respectfully recommend that it may be made a rule that, after a second test on the road, applicants be required to wait for at least one month before taking a third examination.

Investigations and Prosecutions.

Two hundred and forty-one cases have been investigated during 1909. In 33 cases, mostly located in the middle and western part of the State, the offenders have been prosecuted and convicted.

As to the districts covered by the several inspectors, all cases

occurring in the middle and western part of the State have been investigated by Mr. A. F. Foote. In addition, Mr. Foote has given about half of his time to conducting examinations in the same territory. All cases occurring in the eastern and southern part of the State have been investigated by Messrs. Paul H. Weinert and William MacConnell, the latter having been appointed inspector and examiner July 15, 1909.

The sources of information on which investigations have been based were chiefly three: newspaper accounts of accidents; letters of complaint received by the commission, and accounts of accidents forwarded by the Safe Roads Automobile Association. With regard to these last-mentioned cases a large majority of them had already been considered or referred to the inspectors before they were called to our attention by the association.

If the work in this branch of the department continues to increase during the coming year as it has during 1909, it will probably be necessary to secure the services of another investigator in order to give due attention to cases in the southern district. The same man might also conduct the examinations held in Brockton, New Bedford and Fall River. Throughout the year considerable of the time of the inspectors has been devoted to attending hearings held by the Board. Outside the regular work done by the inspectors, as shown in their formal reports, they have been called upon to investigate complaints of a minor nature, and to obtain information of various kinds which has been requested by the Board.

Tabulation of Accidents.

In keeping with the general increase in the demands upon the automobile department, this branch of the work has grown proportionately, involving more and more clerical labor. Clippings referring to not less than 1,130 accident cases have been received. A daily record, based on the information contained in those clippings, has been kept, showing all automobile accidents and collisions in a carefully analyzed tabulation. The greater part of the time of one clerk is required to attend to this tabulation of accidents, the filing of cards and the keeping of the court records. Besides the daily record, a monthly compilation is made. A comparison of a few of the figures for five months of 1908 with figures for the corresponding months of 1909 is given below; also figures for the full twelve months of 1909.

Deaths, Injuries, Collisions.

	1908 ¹	1909 ¹	1909 ²
Total number killed,	13	37	54
Total number injured,	486	558	989
Total number collisions,	607	619	1,130
Total number collisions in daytime,	379	453	826
Total number collisions after dark,	228	166	304
Total number collisions on country roads, . .	214	183	314
Total number collisions on city or town streets,	393	436	816

¹ From July 10 to December 1.² Twelve months, January 1 to December 31.

The most marked difference to be noted in the comparison above is that relating to "collisions after dark." There has been nearly a 25 per cent. decrease in such collisions. The figures would seem to indicate that there is less "joy riding" at night than formerly.

Court Abstracts.

We have on hand upwards of 4,000 court abstracts, received since Jan. 1, 1909. A tabulation of the information contained in them, analyzed under twenty-three separate headings, is appended.

Before it is filed, each abstract requires the following clerical operations: an entry is made in a specially printed record book. The receipt of the card is acknowledged. When, as frequently happens, the address of the defendant is lacking, a letter is written requesting it. The records are searched carefully to discover what other offences, if any, against the automobile law the defendant has committed. When it is found that the defendant has been convicted three times within the calendar year, and whenever any conviction is of a more serious nature, such as reckless operation or intoxication, the abstracts are sent immediately to the secretary of the commission.

During the year many inquiries have been made in person and by telephone regarding the information contained in the abstracts. These inquiries have come for the most part from clerks of courts, police stations, operators and chauffeurs. This use of the court abstracts has steadily increased since the beginning of the year.

It may be noted that the number of abstracts is almost twice as large this year as it was last, and that considerable time is required to attend to them. Some difficulty has been experienced in obtaining abstracts from the courts, but by the persistent writing of letters to the clerks of courts, they have become accustomed to making returns. Some courts, however, still fail to make any returns whatever; hence the probability is that the number of abstracts received would have been much larger had they all been sent in promptly.

Comparing the analysis and summaries of the abstracts of last year with the same for this year, it will be seen that not only is the number of abstracts very much larger, but under every heading in the analysis the offences are much more numerous. But from the figures alone it is not to be inferred that there were more convictions, more cases of reckless operation, intoxication and so forth. The fact that the clerks of courts have apparently learned to send in the abstracts more faithfully than formerly accounts for much of the increase.

F. L. AUSTIN,
Chief Examiner.

ANALYSIS OF THE ABSTRACTS OF COURT RECORDS FOR THE YEAR 1909.

Whole number of abstracts received,	. . . . .	4,271
Persons convicted of unlawful automobiling,	. . . . .	3,892
Number of appeals taken to a higher court,	. . . . .	264
Persons found not guilty,	. . . . .	163
Complaints placed on file,	. . . . .	482
Complaints nol-prossed,	. . . . .	72
Defendants defaulted,	. . . . .	29
Convictions: —		
For overspeeding,	. . . . .	2,574
For reckless operating,	. . . . .	82
For operating while intoxicated,	. . . . .	31
For improper display or lack of register numbers,	. . . . .	155
For operating without carrying license,	. . . . .	245
For operating without carrying registration certificate,	. . . . .	86
For operating an unregistered motor vehicle,	. . . . .	69
For refusing to stop when signalled by officer,	. . . . .	54
For operating with unlighted lamps,	. . . . .	229
For operating without numbers on lamps,	. . . . .	60
For violations of park rules,	. . . . .	186
For failing to give signal when approaching an intersecting way,	. . . . .	344
For miscellaneous offences,	. . . . .	301
Persons sentenced to prison,	. . . . .	8

APPENDIX K.

RELATING TO STATE HIGHWAY TRAFFIC CENSUS.

REPORT OF SECRETARY.

To the Massachusetts Highway Commission.

GENTLEMEN:—Pursuant to your instructions, I have the honor to submit the following account of two records made during the year 1909 of the traffic over the Massachusetts State highways.

Introductory.

The commission, which was organized in the year 1893, began in the following year to construct the State highways, and at the end of the year 1908 740 miles of road had been completed, the roads being mostly of the macadam type of construction.

Previous to the present year, while some records of the traffic had been made in special cases and for particular purposes, no comprehensive study of the vehicular traffic over the State highways had been made. The value of such records was not unrecognized, but the labor involved and the cost of such a general study seemed to be prohibitive.

The obvious changes, however, in the nature of the vehicles using the roads, together with the apparent inadequacy of the water-bound macadam road to withstand the wear of the new self-propelled vehicles, which have multiplied in numbers and in mobility so fast since the year 1906, seemed to make necessary a comprehensive census of the vehicles and of their characteristics. It was likewise apparent that more knowledge was required concerning the present importance of the routes upon which the State highways were located, so that future work in constructing the roads may be done in locations where it is most needed.

Stated briefly, the chief needs of such records were:—

1. To determine the relative importance of the different routes of travel.
2. To secure at least a rough approximation of the relative use of such routes by motor vehicles and by horse-drawn vehicles.

Methods employed.

Since untrained observers only could be secured, the data recorded were as simple as possible, and the tally cards were prepared carefully, so as to leave little or nothing to the judgment of the observers. A reproduction of the tally card will be found in Exhibit A.

No attempt was made to secure records which would determine the volume of traffic in terms of weight, per unit of width of roadway, per unit of time. Such records would be of the greatest value to the commission in its work, but because of the expense involved such a determination would have been impossible.

The following classes of traffic only were observed: single horse (light vehicles); single horse (heavy vehicles); two or more horses (light vehicles); two or more horses (heavy vehicles); automobiles (runabouts); automobiles (touring cars).

In the instructions furnished to the observers a "light vehicle" was stated to mean "a buggy, carryall, democrat wagon or any other vehicle, other than an automobile, which is used usually for pleasure or light business purposes." A "heavy vehicle" was defined as "a farm wagon, milk wagon, tipcart, grocery or provision wagon, or any other vehicle, except an automobile, which is used for carrying heavy loads."

Two separate records were taken, the first in the month of August, beginning on Sunday, August 23, at 7 A.M., and continuing for fourteen hours each day, until 9 P.M. on the following Saturday evening.

The second census began on Sunday, October 10, at 7 A.M., and continued for the full week in precisely the same way as in August.

The August records were taken advisedly, so as to show the abnormal summer travel, particularly that in automobiles, and the October census was expected to indicate the normal traffic conditions which may fairly be considered to apply during the months of March, April, May, September, October and November. During the winter months the roads of Massachusetts are usually either frozen or are covered with snow or ice.

In August, the week chosen proved to be a period of almost perfect weather. There was no storm, and only very light showers were reported and those only in a few localities. In October, however, there were two days on which fairly heavy rains were generally reported.

For the August records 237 observers were employed, and in

October 240 observers' stations were established. Arrangements for the employment of the observers were made by the division engineers, and in most cases boys and girls in advanced grades of the public schools were selected, although in some instances the repair agents of the commission kept the records. The observers generally were interested in the work, and it is believed that the results of the census are as accurate as should be expected. Both weeks selected were normal in that there were no county fairs or other unusual events which would affect the traffic. On the other hand, the two rainy days during the week of the October census were perhaps rather more than the average week usually contains.

The census cost as follows:—

	August.	October.
Observers' pay,	\$2,217 53	\$2,159 70
Printing and postage,	159 31	57 40
Clerical work,	25 10	41 60
	\$2,401 94	\$2,258 70
Average cost per station,	\$10 14	\$9 41

The observers mailed each day to the division engineers their records for the day, so that an opportunity was had to correct quickly any obvious errors. The work moved very smoothly, and but few errors or misunderstandings occurred.

On certain of the main roads leading into Boston the records were taken during the August census for twenty-four hours each day, so as to include the vehicles which carry milk and produce into Boston and its suburbs. The results of the night traffic are shown in Exhibit D.

In addition to the records taken by the employees of the commission, the Metropolitan Park Commission, the park commissioners of the city of Boston and the street commissioner of the city of Newton caused similar counts of the traffic over the roads under their respective jurisdictions to be made, in the same manner and for the same periods. The results of these counts will be found in Exhibit D.

Tabulation of Results, etc.

After a preliminary examination by the division engineers of the observers' tally cards, they were sent to the office of the commission and there checked carefully and the data analyzed. Tables of averages were then compiled, copies of which will be found in Exhibits B and C, the former relating to the August census and the latter to that of October.

The following table shows the recapitulation of the results of both records:—

Table Showing Total Average Daily Traffic at All Stations,¹ Percentages, Averages, etc.

		August Census.	October Census.
Horse-drawn:—			
Light,	.	19,622	16,456
Heavy,	.	17,969	17,967
Total,	.	37,591	34,423
Automobiles:—			
Runabouts,	.	5,922	3,995
Touring cars,	.	21,387	14,514
Total,	.	27,309	18,509
All kinds,	.	64,900	52,952
Per cent. horse-drawn,	.	58	65
Per cent. automobile,	.	42	35
Averages per station: ² —			
Horse-drawn:—			
Light,	.	83	69
Heavy,	.	76	75
Total,	.	159	144
Automobiles,	.	115	77
All kinds,	.	274	221

¹ Several stations were established on the Newburyport turnpike, which has not been taken as a State highway, and the traffic count at such stations is here included. The total results are not affected appreciably by their inclusion.

² In August, 237 stations; in October, 240 stations.

It is greatly to be regretted that there are no figures available showing the traffic conditions before the advent of the automobile, with which to compare the above figures. It may be said, however, that in seven years the motor vehicle traffic has increased on the State highways from substantially nil to 42 per cent. in the summer

months and to 35 per cent. during the remainder of the year, when climatic conditions are favorable.

With the data now at hand the commission should be able to determine the character of surface which is needed for each road, and whether or not one of the bituminous products is needed as a binder to protect the road from the destructive effect of fast-moving automobiles.

Primary Routes.

The commission is now enabled to better classify the main routes of travel and to determine the relative importance of such routes. As illustrative of this point the following table shows some of the principal routes of travel in Massachusetts over which long-distance travel passes. It is not to be assumed that in all respects these routes represent the most important or most traveled sections of State highway, since an examination of the tables in Exhibits B and C will show instances where the local travel on a State highway is much in excess of the average travel on the routes marked "primary." It is fair, however, to say that the following are probably the most important of the "trunk lines," if that expression may be borrowed from the railroad nomenclature.

TABLE SHOWING AVERAGE DAILY TRAFFIC OVER THE PRIMARY ROUTES OF STATE HIGHWAYS.

Route 1. Lowell to Newburyport.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Lowell, . . .	-	-	-	-	-	-	-
Tewksbury, . . .	432	48	87	55	32	65	49
Andover, . . .	404	162	510	32	270	707	38
Lawrence, . . .	433	820	2,440	34	278	1,222	23
Methuen, . . .	434	97	193	50	70	151	46
Haverhill, . . .	-	-	-	-	-	-	-
Groveland, . . .	-	-	-	-	-	-	-
West Newbury, . .	441	78	269	29	58	350	17
Newburyport, . .	-	-	-	-	-	-	-
Totals,		1,205	3,499	-	708	2,495	-
Averages,		241	700	34	142	499	29

Route 2. Boston to Worcester.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston, . . .	-	-	-	-	-	-	-
Newton, . . .	-	-	-	-	-	-	-
Weston, . . .	406	382	990	39	334	739	45
Wayland, . . .	-	-	-	-	-	-	-
Sudbury, . . .	407	191	326	59	236	372	64
Marlborough, . . .	-	-	-	-	-	-	-
Northborough (east),	303	150	207	72	153	208	74
Northborough (west),	305	182	253	71	179	231	77
Shrewsbury, . . .	306	223	480	46	232	486	48
Worcester, . . .	-	-	-	-	-	-	-
Totals,		1,128	2,256	-	1,134	2,036	-
Averages,		226	451	50	227	407	56

Route 3. Boston to Portsmouth, N. H.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston, . . .	-	-	-	-	-	-	-
Revere, . . .	-	-	-	-	-	-	-
Lynn, . . .	-	-	-	-	-	-	-
Swampscott, . . .	-	-	-	-	-	-	-
Salem, . . .	443	382	587	65	259	404	64
Beverly, . . .	444	393	706	56	157	451	35
Wenham, . . .	445	366	728	51	163	477	34
Hamilton, . . .	446	277	439	63	100	241	42
Ipswich, . . .	-	-	-	-	97	296	33
Rowley, . . .	447	236	439	54	80	184	43
Newbury, . . .	448	223	326	69	122	370	33
Newburyport, . . .	-	-	-	-	-	-	-
Salisbury, . . .	449	341	573	59	122	370	33
Salisbury, . . .	450	222	268	82	47	102	46
Totals,		2,440	4,066	-	1,147	2,895	-
Averages,		305	508	60	127	322	40

Route 4. Fall River to Providence, R. I.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Fall River, . . .	-	-	-	-	-	-	-
Somerset (north), .	524	287	872	33	209	805	26
Swansea, . . .	523	58	131	45	18	75	24
Seekonk, . . .	522	107	318	34	98	266	37
Totals,		452	1,321	-	325	1,146	-
Averages,		151	440	34	108	382	28

Route 5. Boston to Lowell and Nashua, N. H.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston,	-	-	-	-	-	-	-
Somerville, . . .	-	-	-	-	-	-	-
Medford, . . .	401	52	329	16	80	447	18
Arlington, . . .	-	-	-	-	-	-	-
Winchester, . . .	408	191	326	59	201	366	55
Woburn, . . .	-	-	-	-	-	-	-
Burlington, . . .	410	100	202	50	110	217	51
Chelmsford (south),.	411	110	248	44	117	295	40
Billerica, . . .	-	-	-	-	-	-	-
Chelmsford, . . .	-	-	-	-	-	-	-
Lowell,	429	121	206	59	222	332	67
Tyngsborough, .	430	100	247	41	117	187	62
Totals,		674	1,558	-	847	1,844	-
Averages,		112	260	43	141	307	46

Route 6. Boston to Providence, R. I.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston, . . .	477	124	486	25	111	340	33
Dedham, . . .	-	-	-	-	-	-	-
Westwood, . . .	513	171	293	59	136	252	54
Norwood, . . .	-	-	-	-	-	-	-
Walpole, . . .	-	-	-	-	-	-	-
Norfolk, . . .	-	-	-	-	-	-	-
Wrentham, . . .	514	175	394	45	118	290	41
Plainville, . . .	-	-	-	-	-	-	-
North Attleborough, . . .	515	178	343	52	142	285	50
Attleborough, . . .	-	-	-	-	-	-	-
Totals,		648	1,516	-	507	1,167	-
Averages,		162	379	43	102	292	35

Route 7. Boston to Plymouth.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston,	-	-	-	-	-	-	-
Quincy (east), . . .	545	465	807	58	214	619	34
Weymouth,	-	-	-	-	-	-	-
Hingham,	546	340	441	77	136	237	57
Cohasset,	547	219	402	55	105	261	40
Scituate,	548	348	544	64	105	254	41
Marshfield,	-	-	-	-	-	-	-
Duxbury,	549	84	199	42	49	185	27
Kingston,	-	-	-	-	-	-	-
Plymouth,	550	170	372	45	55	189	29
Totals,		1,626	2,765	-	664	1,745	-
Averages,		271	461	59	111	291	38

Route 8. Fitchburg to Greenfield.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Fitchburg, . . .	-	-	-	-	-	-	-
Westminster, . . .	{ 204a 204b	144 169	264 323	54 52	89 85	138 127	65 67
Gardner, . . .	-	-	-	-	-	-	-
Baldwinsville, . . .	{ 206a 206b	58 64	246 220	24 29	45 55	246 237	18 23
Phillipston, . . .	-	-	-	-	-	-	-
Athol, . . .	207	113	282	40	84	293	29
Orange, . . .	208	69	179	38	43	176	24
Erving, . . .	{ 209a 209b	- -	- -	- -	34 44	50 84	68 52
Montague, . . .	-	-	-	-	-	-	-
Greenfield, . . .	-	-	-	-	-	-	-
Deerfield, . . .	{ 210a 210b	92 25	233 86	39 29	77 17	207 114	37 15
Totals, . . .		734	1,833	-	573	1,672	-
Averages, . . .		147	367	40	95	279	34

Route 9. Greenfield to North Adams.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Greenfield, . . .	-	-	-	-	-	-	-
Shelburne, . . .	-	-	-	-	-	-	-
Buckland, . . .	-	-	-	-	-	-	-
Charlemont, . . .	214	19	246	7	16	277	6
Florida, . . .	-	-	-	-	-	-	-
North Adams, . . .	-	-	-	-	-	-	-
Totals, . . .		19	246	-	16	277	-
Averages, . . .		-	-	7	-	-	6

Route 10. Greenfield to Holyoke.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Greenfield (east), .	210a	92	233	39	77	207	37
Deerfield, .	-	-	-	-	-	-	-
Sunderland, .	216b	34	235	14	31	292	11
Amherst, .	-	-	-	-	-	-	-
Granby, .	-	-	-	-	-	-	-
South Hadley, .	219a	46	354	13	43	312	14
Holyoke, .	-	-	-	-	-	-	-
Totals, .	.	172	822	-	151	811	-
Averages, .	.	57	274	21	50	270	19

Route 11. Worcester to Fitchburg.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Worcester, .	-	-	-	-	-	-	-
West Boylston, .	307	161	247	65	164	346	48
Sterling, .	308	90	239	37	114	255	40
Leominster, .	342	69	117	58	60	124	48
Fitchburg, .	-	-	-	-	-	-	-
Totals, .	.	220	603	-	338	755	-
Averages, .	.	73	201	36	113	252	45

Route 12. Boston to Fitchburg.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston, . . .	-	-	-	-	-	-	-
Cambridge, . . .	-	-	-	-	-	-	-
Arlington, . . .	-	-	-	-	-	-	-
Lexington, . . .	415	153	368	41	162	353	46
Conecord (south), .	416	222	406	55	215	355	60
Concord (north), .	417	150	242	62	158	281	56
Acton (east), . .	418	115	222	52	109	204	54
Littleton (north), .	420	54	96	56	47	80	59
Littleton, . . .	419	89	156	57	86	149	57
Groton, . . .	421	54	156	35	54	164	33
Shirley, . . .	-	-	-	-	-	-	-
Lunenburg, . . .	201	92	304	30	75	329	22
Fitchburg, . . .	-	-	-	-	-	-	-
Totals, . . .	. . .	929	1,950	-	906	1,915	-
Averages, . . .	. . .	116	244	48	113	239	47

Route 13. Greenfield to Springfield.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Greenfield (east), .	210	92	233	39	77	207	37
Deerfield, . . .	{ 215 216a	93 33	217 241	42 13	71 41	174 338	41 12
Whately, . . .	217	27	97	28	49	102	48
Hatfield, . . .	124	26	78	34	38	101	37
Northampton, . .	120	168	222	75	134	181	74
Holyoke, . . .	-	-	-	-	-	-	-
Chicopee, . . .	324	98	434	23	79	426	19
Chicopee, . . .	323	105	408	26	99	377	26
Springfield, . . .	-	-	-	-	-	-	-
Totals, . . .	. . .	642	1,930	-	588	1,906	-
Averages, . . .	. . .	80	241	33	74	238	31

Route 14. Worcester to Springfield.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Worcester (west), .	-	-	-	-	-	-	-
Leicester, . . .	316	177	391	45	147	342	43
Spencer, . . .	315	163	221	74	123	192	64
Brookfield, . . .	317a	142	206	69	109	164	67
West Brookfield, .	-	-	-	-	-	-	-
Warren, . . .	319	134	284	47	123	246	50
Palmer, . . .	320a	125	144	87	118	184	64
Wilbraham, . . .	322	201	253	80	150	206	73
Springfield, . . .	-	-	-	-	-	-	-
Totals,		942	1,499	-	770	1,334	-
Averages,		157	250	63	128	222	58

Route 15. Pittsfield to Vermont Line.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Pittsfield, . . .	106	193	488	39	125	364	35
Lanesborough, . . .	-	-	-	-	-	-	-
Cheshire, . . .	105	81	190	42	54	148	37
Adams, . . .	104	7	112	6	9	128	7
North Adams, . . .	102	98	304	32	68	258	26
Clarksburg, . . .	103	25	222	11	16	213	7
Totals,		404	1,316	-	272	1,111	-
Averages,		81	263	31	54	222	24

Route 16. Springfield to Pittsfield and New York Line.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Springfield, . . .	-	-	-	-	-	-	-
West Springfield, . .	118	157	263	60	167	249	67
Westfield, . . .	117	109	188	58	114	197	58
Russell, . . .	116	77	115	66	91	122	75
Huntington, . . .	115	59	183	32	101	215	47
Chester, . . .	-	-	-	-	-	-	-
Becket, . . .	-	-	-	-	-	-	-
Lee (Jacob's Ladder),	111	29	180	16	51	183	28
Lee (north), . . .	108	77	234	32	75	203	37
Lenox, . . .	-	-	-	-	-	-	-
Pittsfield, . . .	-	-	-	-	-	-	-
Pittsfield (west), . .	107	130	238	54	102	225	45
Hancock, . . .	-	-	-	-	-	-	-
Totals,		638	1,401	-	701	1,394	-
Averages,		91	200	46	100	199	50

Route 17. Boston to Bourne (Cape Cod).

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Boston,	-	-	-	-	-	-	-
Milton,	-	-	-	-	-	-	-
Quincy,	-	-	-	-	-	-	-
Randolph, . . .	537	78	147	52	88	130	67
Avon,	-	-	-	-	-	-	-
Brockton, . . .	-	-	-	-	-	-	-
West Bridgewater, .	536	165	411	40	124	367	34
Bridgewater, . . .	535	140	337	42	86	241	36
Middleborough (s.),	531	159	291	55	75	206	36
Rochester, . . .	-	-	-	-	-	-	-
Wareham, (north)	557	132	164	80	45	73	62
Wareham (east), .	530	370	572	65	133	290	46
Bourne,	512a	303	449	68	34	77	44
Totals,		1,347	2,371	-	585	1,384	-
Averages,		192	339	57	84	198	42

Route 18. Springfield to Connecticut Line via Agawam.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Springfield, . . .	-	-	-	-	-	-	-
Agawam, . . .	119	74	158	47	10	194	5
Totals, . . .	.	74	158	-	10	194	-
Averages, . . .	.	-	-	47	-	-	5

Route 19. Groton to New Hampshire Line via Townsend.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Groton, . . .	421	54	156	35	54	164	33
Pepperell, . . .	-	-	-	-	-	-	-
Townsend, . . .	202	59	344	18	56	184	31
Ashby, . . .	-	-	-	-	-	-	-
Totals, . . .	.	113	500	-	110	348	-
Averages, . . .	.	57	250	23	55	174	32

Route 20. Worcester to Providence, R. I., via Blackstone.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Worcester, . . .	-	-	-	-	-	-	-
Millbury, . . .	337	33	288	12	12	110	11
Sutton, . . .	338	9	246	4	6	256	3
Douglas, . . .	339	12	85	14	9	85	11
Uxbridge, . . .	340	65	119	55	-	-	-
Blackstone, . . .	-	-	-	-	-	-	-
Totals, . . .	.	119	738	-	27	451	-
Averages, . . .	.	30	185	16	9	150	6

Route 21. Bourne to Provincetown.

CITY OR TOWN.	Station Number.	AUGUST.			OCTOBER.		
		Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.	Auto-mobiles.	All Kinds.	Per Cent. Auto-mobiles.
Bourne, . . .	512a	303	449	68	34	77	44
Sandwich, . . .	508	117	175	67	33	86	38
Barnstable (west), .	-	-	-	-	-	-	-
Yarmouth, . . .	505	168	433	38	43	287	15
Dennis, . . .	-	-	-	-	-	-	-
Brewster, . . .	-	-	-	-	-	-	-
Orleans, . . .	503	69	160	43	12	76	16
Eastham, . . .	-	-	-	-	-	-	-
Wellfleet, . . .	502	31	77	40	7	49	14
Truro, . . .	-	-	-	-	-	-	-
Provincetown, .	501	36	197	18	8	47	17
Totals, . . .		724	1,491	-	137	622	-
Averages, . . .		121	249	49	23	104	22

In considering the average figures shown in the foregoing tables of primary routes, it must be borne in mind, in all cases, that wherever there is a city or other thickly populated community along the route, the travel in its vicinity is greatly augmented; for example, on Route 1, extending from Lowell to Newburyport, the traffic over the road at Lawrence averaged in October 1,222 vehicles per day, while in the adjoining town of Methuen the record showed but 151 vehicles a day. There is no doubt that most of the Lawrence traffic did not go far toward Newburyport.

When the commission began its work, in 1893, there was no apparent need of through roads, such as the routes from Boston to Worcester or from Boston to Newburyport, since but few persons needed to go for such long distances in horse-drawn vehicles. With the exception of furniture-moving vans and bicycles, such routes were not used to any considerable extent for long-distance travel, and such traffic as existed was so small as to warrant no large outlay for improving the roads for that kind of use. It is true that milk and other farm produce were hauled for considerable distances, but rarely was such merchandise drawn farther than from 15 to 20 miles.

The problem which the commission had to deal with, therefore, at the beginning of its work, was that of improving the main roads from one town to another, having in mind only relatively short-haulage distances. The early State roads were built almost solely for business purposes.

It thus happened that a number of roads were built in the early years of the commission's work which do not now fall into the primary routes, although most of them would be included in what might be called secondary routes.

That the State highways which are not on the primary routes were and are of great importance to the communities in which they were built there is no doubt. Many of them show a large traffic, and in some instances, as has already been stated, such roads, even when more or less isolated from the primary routes, show a larger use than do some portions of the trunk lines.

After the year 1900, however, the use of the highways changed with the coming of the automobile. Instead of its being a rare occurrence, within a few years hundreds of automobiles were operated daily for distances of 50 miles or more over the main lines of travel, and such use is increasing very rapidly from year to year.

Since the traffic census shows that of the total road traffic in the month of August 42 per cent. was in automobiles, and that in October 35 per cent. was of the same character, it is quite evident that the through routes or trunk lines must be now seriously considered in future extensions of the Massachusetts State highways.

Such roads as have been built on other than the primary routes, while not particularly useful for automobile tours, are still as necessary, and are, without doubt, used as much for business purposes as formerly.

It is not that the use of the State roads has lessened in any instance, but rather that the use of certain main roads has increased greatly because of the new mode of locomotion.

In Exhibit E will be found a map showing the primary routes, each line of travel being numbered to correspond with the route numbers hereinbefore given. The same procedure may be easily adopted for the secondary routes.

Respectfully submitted,

A. B. FLETCHER,

Secretary.

EXHIBIT A.

<u>THE COMMONWEALTH OF MASSACHUSETTS</u>		<u>STATION NO.</u>
MASSACHUSETTS HIGHWAY COMMISSION		<u>TOWN-CITY</u>
TRAFFIC RECORD		<u>DATE</u>
1909		<u>LOCATION OF STATION</u>
(AT OR NEAR STA. M.H.C. NOTATION)		

KIND OF VEHICLE.	7 A.M. TO 9 A.M.	9 A.M. TO 11 A.M.	11 A.M. TO 1 P.M.	1 P.M. TO 3 P.M.	3 P.M. TO 5 P.M.	5 P.M. TO 7 P.M.	7 P.M. TO 9 P.M.	TOTALS
SINGLE HORSE { LIGHT VEHICLE	<input type="checkbox"/>							
SINGLE HORSE { HEAVY VEHICLE	<input type="checkbox"/>							
TWO OR MORE HORSES { LIGHT VEHICLE	<input type="checkbox"/>							
TWO OR MORE HORSES { HEAVY VEHICLE	<input type="checkbox"/>							
AUTOMOBILE { RUNABOUT	<input type="checkbox"/>							
AUTOMOBILE { TOURING CAR	<input type="checkbox"/>							
TOTALS.								
WEATHER CONDITIONS.								

***** SIGNATURE OF OBSERVER *****

OBSERVER WILL NOT WRITE IN THIS SPACE.

INSTRUCTIONS TO OBSERVERS.

1. Examine carefully the card marked "Sample," sent to you with the cards upon which you are to keep your records, and be sure that you understand the method of keeping the tally.

2. Your duties begin promptly at 7 o'clock in the morning and end at 9 o'clock in the evening for the seven days shown on the cards furnished to you.

3. In recording vehicles which pass your station, make a mark in the proper column and on the proper line for every vehicle of the kinds called for on the cards, but do not record motor cycles, bicycles or pedestrians. Make an entry for every vehicle, no matter in which direction it is going or whether it has passed you previously. Entries may be made with a lead pencil.

4. "Light vehicle" means a buggy, carryall, democrat wagon or any other vehicle, other than an automobile, which is used usually for pleasure or light business purposes.

"Heavy vehicle" means a farm wagon, milk wagon, tipcart, grocery or provision wagon or any other vehicle, except an automobile, which is used for carrying heavy loads.

5. After you have recorded all of the vehicles during the period from 7 A.M. to 9 P.M., add your tally marks, and place the totals at the right of the card and at the bottom of the card in the spaces provided.

6. When you are sure the totals are added correctly, enclose the card for the day, after you have signed it, in one of the stamped addressed envelopes furnished to you and mail it at once.

7. Be sure that you use the right card each day (look at the date at the top of the card), and do not fail to record every vehicle called for by the card which passes your station.

8. If there is anything which you do not understand about the cards or these instructions, write at once to the division engineer, to whom you are to send the cards.

AUGUST, 1909.

EXHIBIT B.

DAILY AVERAGES FROM TRAFFIC RECORDS TAKEN FOURTEEN HOURS

Division 1.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
Williamstown, . . .	71	51	8	21	18	74	79	72	151	92	243
North Adams (south),	107	59	8	32	41	57	115	91	206	98	304
Clarksburg, . . .	75	68	7	47	8	17	82	115	197	25	222
Adams (east), . . .	55	19	10	21	3	4	65	40	105	7	112
Cheshire, . . .	46	41	5	17	13	68	51	58	109	81	190
Pittsfield (east), . .	95	40	10	150	40	153	105	190	295	193	488
Pittsfield (west), . .	63	9	19	17	13	117	82	26	108	130	238
Richmond, . . .	27	6	7	7	4	27	34	13	47	31	78
Lee (north), . . .	81	42	14	20	6	71	95	62	157	77	234
Stockbridge (north), .	26	3	21	2	7	148	47	5	52	155	207
Lee (south), . . .	79	37	7	24	6	32	86	61	147	38	185
Lee (east), . . .	105	13	7	26	5	24	112	39	151	29	180
Great Barrington, . .	95	45	26	40	14	41	121	85	206	55	261
Hinsdale, . . .	36	36	3	7	4	33	39	43	82	37	119
Windsor, . . .	36	5	12	22	3	21	48	27	75	24	99
Huntington, . . .	64	19	9	32	22	37	73	51	124	59	183
Russell, . . .	17	10	2	9	18	59	19	19	38	77	115
Westfield (west), . .	50	11	5	13	24	85	55	24	79	109	188
West Springfield, . .	35	38	2	31	30	127	37	69	106	157	263
Agawam, . . .	30	31	2	21	25	49	32	52	84	74	158
Northampton, . . .	31	12	1	10	39	129	32	22	54	168	222
Easthampton (north),	97	43	2	30	5	33	99	73	172	38	210
Easthampton, . . .	42	28	1	4	2	15	43	32	75	17	92
Goshen, . . .	69	5	12	13	7	33	81	18	99	40	139
Hatfield, . . .	32	17	1	2	5	21	33	19	52	26	78
Totals, . . .	1,464	688	201	618	362	1,475	1,665	1,306	2,971	1,837	4,808

EXHIBIT B.

EACH DAY FOR ONE WEEK, BEGINNING AUG. 22, 1909, AT 7 A.M.

Division 1.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.	
Light.	Heavy.	All.		Light.	Heavy.	All.			
33	30	63	37	95	95	95	80	89	101. North Adams Rd.
38	30	68	32	139	120	130	85	111	102. Adams Rd.
37	52	89	11	99	150	124	22	81	103. North Adams Rd.
58	36	94	6	78	53	66	6	41	104. Pumpkin Hook Rd.
27	31	58	42	61	76	69	70	69	105. Pittsfield—North Adams Rd.
22	39	61	39	126	250	186	168	178	106. Dalton Rd.
35	11	46	54	99	34	68	113	87	107. Pittsfield—Lebanon, N. Y., Rd.
44	17	61	39	41	17	30	27	28	107A. Pittsfield—Richmond Rd.
41	27	68	32	114	82	99	67	85	108. Pittsfield—Springfield Rd.
23	3	26	74	57	7	33	135	76	109. Stockbridge—Lenox Rd.
47	33	80	20	103	80	93	33	68	110. Stockbridge Rd.
62	22	84	16	135	51	95	25	66	111. Jacob's Ladder Rd.
46	33	79	21	146	112	129	48	95	112. Monterey Rd.
33	36	69	31	47	57	52	32	43	113. Hinsdale—Dalton Rd.
49	27	76	24	58	36	47	21	36	114. Dalton Rd. or Pittsfield—Northampton Rd.
40	28	68	32	88	67	78	51	67	115. Russell—Chester or Pittsfield—Springfield Rd.
17	17	34	66	23	25	24	67	42	116. Russell—Huntington or Pittsfield—Springfield Rd.
29	13	42	58	66	32	50	95	69	117. Russell Rd.
14	26	40	60	45	91	67	137	96	118. Westfield—Springfield or Pittsfield—Springfield Rd.
20	33	53	47	39	68	53	64	58	119. Springfield—Hartford Rd.
15	10	25	75	39	29	34	146	81	120. Holyoke—Northampton Rd.
47	35	82	18	119	96	108	33	77	121. Northampton Rd.
47	35	82	18	52	42	47	15	33	122. Holyoke St.
58	13	71	29	98	24	62	35	51	123. Main St. or Northampton—Pittsfield Rd.
42	24	66	34	40	25	33	23	28	124. Greenfield—Northampton.
35	27	62	38						

DAILY AVERAGES FROM TRAFFIC

Division 2.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
Lunenburg, . . .	114	57	13	28	29	63	127	85	212	92	304
Townsend, . . .	206	50	2	27	23	36	208	77	285	59	344
Ashby, . . .	83	24	2	21	15	43	85	45	130	58	188
Westminster, . . .	80	10	5	26	22	122	85	36	121	144	265
Gardner (south), .	124	11	5	14	34	135	129	25	154	169	323
Winchendon, . . .	148	58	8	19	16	35	156	77	233	51	284
Baldwinville, . . .	109	45	2	32	27	31	111	77	188	58	246
Baldwinville, . . .	98	36	1	21	21	43	99	57	156	64	220
Athol, . . .	113	22	7	27	32	81	120	49	169	113	282
Orange, . . .	61	25	3	21	27	42	64	46	110	69	179
Montague (east), .	28	6	1	4	6	51	29	10	39	57	96
Greenfield (east), .	78	34	5	24	17	75	83	58	141	92	233
Montague City, .	29	16	2	14	9	16	31	30	61	25	86
Greenfield, . . .	81	7	5	15	14	70	86	22	108	84	192
Colrain, . . .	52	10	6	17	5	22	58	27	85	27	112
Buckland, . . .	111	15	4	28	5	38	115	43	158	43	201
Charlemont, . . .	132	33	17	45	4	15	149	78	227	19	246
Deerfield, . . .	69	27	4	24	15	78	73	51	124	93	217
Deerfield, . . .	125	36	9	38	10	23	134	74	208	33	241
Sunderland, . . .	118	33	10	40	10	24	128	73	201	34	235
Whately, . . .	55	5	5	5	5	22	60	10	70	27	97
Hadley, . . .	63	52	4	24	11	68	67	76	143	79	222
South Hadley, . . .	75	145	9	79	11	35	84	224	308	46	354
Granby, . . .	88	160	4	48	14	20	92	208	300	34	334
Belchertown, . . .	135	33	1	22	7	10	136	55	191	17	208
Ware (south), . . .	21	10	1	9	5	12	22	19	41	17	58
Ware, . . .	77	91	3	36	8	16	80	127	207	24	231
Barre, . . .	111	48	11	17	3	41	122	65	187	44	231
Northfield, . . .	363	74	16	70	29	68	379	144	523	97	620
Totals, . . .	2,947	1,173	165	795	434	1,335	3,112	1,968	5,080	1,769	6,849

RECORDS, ETC. — *Continued.**Division 2.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.		
Light.	Heavy.	All.		Light.	Heavy.	All.				
42	28	70	30	153	112	133	80	111	201. Fitchburg Rd.	
60	22	82	18	251	101	179	51	125	202. Groton—Ashby Rd.	
45	24	69	31	102	59	82	50	69	203. Fitchburg Rd.	
32	14	46	54	102	47	76	125	97	204A. Fitchburg traffic.	
40	8	48	52	155	33	97	147	118	204B. Westminster or Greenfield—Fitchburg Rd. Gardner traffic.	
55	27	82	18	188	101	147	44	104	205. Maple St.	
45	31	76	24	134	101	118	50	90	206A. Gardner traffic.	
45	26	71	29	119	75	98	56	80	206B. Phillipston traffic.	
43	17	60	40	145	64	106	98	103	207. Orange Rd. or Main St. Greenfield— Fitchburg Rd.	
36	26	62	38	77	60	69	60	65	208. Orange—Erving or Greenfield—Fitch- burg Rd.	
30	10	40	60	35	13	25	50	35	209. Turners Falls—Millers Falls Rd.	
36	25	61	39	100	76	89	80	85	210A. Greenfield Rd.	
36	35	71	29	37	39	38	22	31	210B. Montague City Rd.	
45	12	57	43	104	29	68	73	70	211. Bernardston Rd.	
52	24	76	24	70	36	53	23	41	212. Shelburne Falls Rd.	
57	21	78	22	139	57	99	37	73	213. Ashfield—Shelburne Falls Rd.	
61	32	93	7	180	103	143	17	90	214. Shelburne Falls—North Adams Rd.	
34	24	58	42	88	67	78	81	79	215. Greenfield Rd.	
56	31	87	13	162	97	131	29	88	216A. Sunderland Rd.	
55	31	86	14	154	96	126	30	86	216B. South Deerfield—Amherst Rd.	
62	10	72	28	72	13	44	23	35	217. Greenfield—Northampton Rd.	
30	34	64	36	81	100	90	69	81	218. Northampton—Amherst Rd.	
24	63	87	13	101	295	194	40	129	219A. South Hadley Village Rd.	
28	62	90	10	111	274	189	30	122	219B. Granby—Holyoke Rd.	
65	26	91	9	164	72	120	15	76	220. Granby or Belchertown—Holyoke Rd.	
38	33	71	29	27	25	26	15	21	221. Palmer Rd.	
35	55	90	10	96	167	130	21	84	222. Gilbertville Rd.	
53	28	81	19	147	86	118	38	84	223. Barre Rd.	
61	23	84	16	457	190	329	84	226	224. Main St.	
45	29	74	26							

DAILY AVERAGES FROM TRAFFIC

Division 3.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
Ashland, . . .	45	15	1	8	7	13	46	23	69	20 89
Southborough (north),	28	20	—	4	12	22	28	24	52	34 86
Northborough (east), .	28	22	—	7	27	123	28	29	57	150 207
Northborough (south),	17	4	—	5	3	6	17	9	26	9 35
Northborough (south),	5	8	—	41	1	1	5	49	54	2 56
Northborough (west), .	25	19	—	27	14	168	25	46	71	182 253
Shrewsbury, . . .	110	92	4	51	38	185	114	143	257	223 480
West Boylston, . . .	33	31	3	19	43	118	36	50	86	161 247
Sterling,	87	30	5	27	16	74	92	57	149	90 239
Sterling,	51	16	2	10	7	18	53	26	79	25 104
Princeton,	71	21	24	34	6	21	95	55	150	27 177
Rutland,	86	26	20	33	17	25	106	59	165	42 207
Holden (center), . .	54	28	10	16	43	52	64	44	108	95 203
Worcester (Holden), .	60	38	4	18	17	36	64	56	120	53 173
Grafton,	31	37	2	19	11	30	33	56	89	41 130
Grafton,	36	38	2	15	12	27	38	53	91	39 130
Spencer,	28	13	3	14	24	139	31	27	58	163 221
Leicester,	64	82	6	62	24	153	70	144	214	177 391
Brookfield,	36	17	1	10	18	124	37	27	64	142 206
Brookfield,	30	17	1	6	3	12	31	23	54	15 69
West Brookfield, . .	33	14	3	7	24	112	36	21	57	136 193
West Brookfield, . .	27	25	2	3	13	4	29	28	57	17 74
Warren,	71	59	2	18	27	107	73	77	150	134 284
Palmer,	13	4	—	2	12	113	13	6	19	125 144
Palmer,	26	9	1	5	3	18	27	14	41	21 62
Brimfield,	64	5	1	6	1	1	65	11	76	2 78
Wilbraham,	17	26	1	8	34	167	18	34	52	201 253
Chicopee,	53	132	4	114	28	77	57	246	303	105 408
Chicopee,	50	214	3	69	33	65	53	283	336	98 434
East Longmeadow, .	71	42	6	52	9	21	77	94	171	30 201
Monson,	46	17	2	11	7	21	48	28	76	28 104
<i>Am'ts carried forward,</i>	1,396	1,121	113	721	534	2,053	1,509	1,842	3,351	2,587 5,938

RECORDS, ETC.—Continued.

Division 3.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.	
Light.	Heavy.	All.		Light.	Heavy.	All.		
52	26	78	22	55	30	43	17	301. Cordaville or Ashland—Westborough Rd.
33	28	61	39	34	32	33	30	302. Marlborough—Westborough Rd.
14	14	28	72	34	38	36	130	303. Main St. or Marlborough—Westborough Rd.
49	26	75	25	20	12	16	8	304A. State Rd., South St. or Northborough —Westborough Rd.
9	88	97	3	6	64	34	2	304B. Hospital Rd.
10	19	29	71	30	61	45	158	305. West Main St. or Marlborough—Worcester Rd.
24	30	54	46	137	188	162	193	306. Main St. or Worcester—Boston Rd.
15	20	35	65	43	66	54	140	307. Worcester St. or Worcester—Fitchburg Rd.
39	24	63	37	111	75	94	78	308. Worcester—Fitchburg Rd.
51	25	76	24	64	34	50	22	309. Clinton Rd.
54	31	85	15	114	72	94	23	310. Depot Rd., Princeton.
51	29	80	20	128	78	104	36	311. Worcester—Barre Rd.
32	22	54	46	77	58	68	83	312. Worcester—Barre or Jefferson Rd.
37	32	69	31	77	74	76	46	313. Worcester Rd.
25	43	68	32	40	74	56	36	314A. Through traffic on State highway Worcester St.
29	41	70	30	46	70	57	34	314B. Traffic diverted to North Grafton.
14	12	26	74	37	36	37	142	315. Main St. or Worcester—Springfield Rd.
18	37	55	45	84	189	135	154	316. Main St. or Worcester—Springfield Rd.
18	13	31	69	45	36	40	123	317A. Worcester—Springfield Rd., West Brookfield traffic.
45	33	78	22	37	30	34	13	317B. North Brookfield traffic.
19	11	30	70	43	28	36	118	318A. Ware Rd.
39	38	77	23	35	37	36	15	318B. Worcester—Springfield Rd. or Warren Rd.
26	27	53	47	88	101	94	117	319. Worcester—Springfield Rd.
9	4	13	87	16	8	12	109	320A. Boston Rd. or Worcester—Springfield Rd.
44	23	67	33	33	18	26	18	320B. Brimfield Rd.
83	14	97	3	78	14	48	2	321. Palmer Rd.
7	13	20	80	22	45	33	175	322. Springfield—Worcester Rd.
14	60	74	26	69	324	190	91	323. Springfield—Rockminster Rd.
12	65	77	23	64	372	211	85	324. Holyoke Rd. or Chicopee St.
38	47	85	15	93	124	107	26	325. Springfield Rd.
46	27	73	27	58	37	48	24	326. Palmer—Monson Rd.

DAILY AVERAGES FROM TRAFFIC

Division 3 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
<i>Am'ts brought forward,</i>	1,396	1,121	113	721	534	2,053	1,509	1,842	3,351	2,587	5,938
Sturbridge, . . .	97	78	2	41	7	32	99	119	218	39	257
Southbridge, . . .	33	9	—	7	7	18	33	16	49	25	74
Dudley,	144	79	2	70	19	34	146	149	295	53	348
Webster,	117	22	6	19	12	50	123	41	164	62	226
Charlton,	49	20	2	14	2	14	51	34	85	16	101
Charlton,	28	7	—	5	4	11	28	12	40	15	55
Oxford,	22	15	13	30	16	18	35	45	80	34	114
Auburn,	20	11	3	18	14	49	23	29	52	63	115
Millbury,	93	56	18	29	10	50	111	85	196	60	256
Auburn,	62	81	4	78	7	34	66	159	225	41	266
Millbury,	173	40	18	24	15	18	191	64	255	33	288
Sutton,	145	66	3	23	3	6	148	89	237	9	246
Douglas,	53	17	—	3	2	10	53	20	73	12	85
Uxbridge,	23	11	1	19	12	53	24	30	54	65	119
Paxton,	119	40	21	36	11	72	140	76	216	83	299
Leominster,	21	17	3	7	20	49	24	24	48	69	117
Totals,	2,595	1,690	209	1,144	695	2,571	2,804	2,834	5,638	3,266	8,904

Division 4.

Medford,	45	141	4	87	14	38	49	228	277	52	329
Stoneham (north), .	47	30	2	13	59	151	49	43	92	210	302
Andover (south), .	35	18	1	8	31	111	36	26	62	142	204
Andover (north), .	132	145	11	60	53	109	143	205	348	162	510
Watertown,	79	195	1	79	52	112	80	274	354	164	518
Weston,	256	172	16	164	107	275	272	336	608	382	990
Sudbury (south), .	83	34	3	15	18	173	86	49	135	191	326
Winchester,	76	57	4	27	57	120	80	84	164	177	341
Woburn,	39	30	1	25	20	59	40	55	95	79	174
Burlington (center), .	49	29	—	24	25	75	49	53	102	100	202
<i>Am'ts carried forward,</i>	841	851	43	502	436	1,223	884	1,353	2,237	1,659	3,896

RECORDS, ETC. — *Continued.**Division 3 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.	Light.	Heavy.	All.					
39	46	85	15	119	157	137	34	94	327. Southbridge Rd.	
45	22	67	33	40	21	31	22	27	328. Charlton Rd.	
42	43	85	15	176	196	186	46	127	329. Webster Rd.	
54	18	72	28	148	54	103	54	82	330. Thompson Rd.	
51	34	85	15	61	45	53	14	37	331. Charlton—Depot Rd.	
51	22	73	27	34	16	25	13	20	332. Worcester—Southbridge Rd.	
31	39	70	30	42	59	50	30	42	333. Worcester—Southbridge Rd.	
20	25	45	55	28	38	33	55	42	334. Worcester—Webster Rd.	
43	33	76	24	134	112	123	52	93	335. Main St. or Worcester Rd.	
25	60	85	15	79	209	142	36	97	336. Worcester—Webster Rd.	
66	22	88	12	230	84	160	29	105	337. Sutton Rd.	
60	36	96	4	178	117	149	8	90	338. Douglas Rd.	
62	24	86	14	64	26	46	10	31	339. Uxbridge Rd.	
20	25	45	55	29	39	34	57	44	340. Worcester—Providence Rd.	
47	25	72	28	169	100	136	72	109	341. Worcester—Barre Rd.	
21	21	42	58	29	32	30	60	43	342. Fitchburg—Sterling Rd.	
31	32	63	37							

Division 4.

15	69	84	16	59	300	174	45	120	401. Boston—Lawrence Rd.
16	14	30	70	59	57	58	183	110	402. Reading Rd. (Main St.).
18	13	31	69	43	34	39	123	75	403. North Reading Rd. (Main St.).
28	40	68	32	172	270	219	141	186	404. Lawrence Rd.
15	53	68	32	96	360	222	143	189	405. Waltham—Brighton Rd.
27	34	61	39	328	442	382	332	361	406. Waltham—Marlborough Rd.
26	15	41	59	104	65	85	166	119	407. Marlborough—Waltham Rd.
23	25	48	52	96	110	103	154	124	408. Arlington—Woburn Rd.
23	32	55	45	48	72	60	69	64	409. Winchester—Burlington Rd.
24	26	50	50	59	70	64	87	74	410. Billerica Rd.

DAILY AVERAGES FROM TRAFFIC

Division 4 — Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
<i>Am'ts brought forward,</i>	841	851	43	502	436	1,223	884	1,353	2,237	1,659	3,896
Chelmsford (south), .	68	52	1	17	28	82	69	69	138	110	248
Tewksbury (center), .	65	36	6	18	35	75	71	54	125	110	235
Lexington, . . .	42	44	1	33	18	72	43	77	120	90	210
Bedford, . . .	34	6	—	15	2	6	34	21	55	8	63
Lexington, . . .	61	76	22	56	52	101	83	132	215	153	368
Concord (south), .	94	52	3	35	50	172	97	87	184	222	406
Concord (north), .	48	34	2	8	32	118	50	42	92	150	242
Acton (east), . . .	72	23	2	10	25	90	74	33	107	115	222
Littleton, . . .	44	14	1	8	13	76	45	22	67	89	156
Littleton, . . .	19	18	1	4	8	46	20	22	42	54	96
Groton, . . .	76	22	1	3	9	45	77	25	102	54	156
Acton (west), . . .	59	35	2	9	9	25	61	44	105	34	139
Boxborough, . . .	43	18	1	8	3	18	44	26	70	21	91
Harvard, . . .	73	13	2	11	14	22	75	24	99	36	135
Westford, . . .	27	5	2	8	4	22	29	13	42	26	68
Chelmsford, . . .	62	35	1	25	6	18	63	60	123	24	147
Chelmsford, . . .	137	91	1	38	14	46	138	129	267	60	327
Chelmsford (north), .	84	65	1	43	33	69	85	108	193	102	295
Lowell (north), . .	50	23	2	10	44	77	52	33	85	121	206
Tyngsborough, . . .	75	25	—	47	17	83	75	72	147	100	247
Dracut, . . .	42	22	1	12	2	2	43	34	77	4	81
Tewksbury, . . .	27	8	1	3	8	40	28	11	39	48	87
Lawrence, . . .	575	635	60	350	361	459	635	985	1,620	820	2,440
Methuen, . . .	49	31	1	15	26	71	50	46	96	97	193
North Andover, . .	69	34	3	16	19	42	72	50	122	61	183
North Andover, . .	63	27	1	23	18	39	64	50	114	57	171
Middleton, . . .	88	52	1	10	12	42	89	62	151	54	205
Haverhill (east), . .	59	29	1	18	12	30	60	47	107	42	149
Amesbury, . . .	38	13	1	10	9	63	39	23	62	72	134
Amesbury, . . .	95	92	3	38	22	54	98	130	228	76	304
<i>Am'ts carried forward,</i>	3,179	2,481	168	1,403	1,341	3,328	3,347	3,884	7,231	4,669	11,900

RECORDS, ETC. — *Continued.*

Division 4 — Continued.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	
Light.	Heavy.	All.		Light.	Heavy.	All.	All Kinds.	
28	28	56	44	83	91	87	96	91
30	23	53	47	86	71	79	96	86
20	37	57	43	52	101	76	78	77
54	33	87	13	41	28	35	7	23
23	36	59	41	100	174	135	133	134
24	21	45	55	117	114	116	193	148
21	17	38	62	60	55	58	130	88
33	15	48	52	89	43	67	100	81
29	14	43	57	54	29	42	77	57
21	23	44	56	24	29	26	47	35
49	16	65	35	93	33	64	47	57
44	32	76	24	73	58	66	30	51
48	29	77	23	53	34	44	18	33
56	18	74	26	90	32	62	31	49
43	19	62	38	35	17	26	23	25
43	41	84	16	76	79	77	21	54
42	39	81	19	166	170	168	52	119
29	37	66	34	102	142	121	89	108
25	16	41	59	63	43	53	105	75
30	29	59	41	90	95	93	87	90
53	42	95	5	52	45	48	3	30
32	13	45	55	34	14	24	42	32
26	40	66	34	765	1,296	1,019	713	892
26	24	50	50	60	60	60	84	70
39	27	66	34	87	66	77	53	67
37	29	66	34	77	66	72	50	63
43	30	73	27	107	82	95	47	75
40	32	72	28	72	62	67	37	54
29	17	46	54	47	30	39	63	49
32	43	75	25	118	171	143	66	111

DAILY AVERAGES FROM TRAFFIC

Division 4 — Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			Automobiles,	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
<i>Am'ts brought forward,</i>	3,179	2,481	168	1,403	1,341	3,328	3,347	3,884	7,231	4,669	11,900
West Newbury, . . .	116	41	2	32	20	58	118	73	191	78	269
Saugus, . . .	33	174	4	74	18	67	37	248	285	85	370
Salem, . . .	87	63	4	51	88	294	91	114	205	382	587
Beverly (north), . . .	143	98	12	60	101	292	155	158	313	393	706
Wenham (center), . . .	212	106	9	35	107	259	221	141	362	366	728
Hamilton, . . .	112	30	3	17	62	215	115	47	162	277	439
Rowley, . . .	123	65	1	14	31	205	124	79	203	236	439
Newbury, . . .	59	36	1	7	37	186	60	43	103	223	326
Salisbury, . . .	115	90	9	18	47	294	124	108	232	341	573
Salisbury, . . .	22	16	1	7	36	186	23	23	46	222	268
Saugus (Newburyport turnpike),	55	31	3	6	3	37	58	37	95	40	135
Lynnfield (Newburyport turnpike).	20	15	1	11	9	25	21	26	47	34	81
Danvers (Newburyport turnpike).	36	15	1	9	2	64	37	24	61	66	127
Ipswich (Newburyport turnpike).	3	2	—	1	—	9	3	3	6	9	15
Melrose, . . .	34	10	1	1	3	27	35	11	46	30	76
Revere (east), . . .	134	146	4	63	71	159	138	209	347	230	577
Saugus River bridge, .	121	—	3	—	214	963	124	—	124	1,177	1,301
Beverly (east), . . .	373	145	45	72	166	810	418	217	635	976	1,611
Gloucester (south), .	166	65	15	33	60	563	181	98	279	623	902
Gloucester, . . .	80	119	5	55	32	168	85	174	259	200	459
Essex, . . .	108	66	1	18	20	202	109	84	193	222	415
Ayer, . . .	27	5	1	4	9	30	28	9	37	39	76
Shirley, . . .	58	43	2	13	10	32	60	56	116	42	158
Stow, . . .	77	21	1	7	18	54	78	28	106	72	178
Hudson, . . .	42	28	1	12	20	38	43	40	83	58	141
Wellesley, . . .	46	50	2	25	46	92	48	75	123	138	261
Natick (west), . . .	42	44	4	17	26	69	46	61	107	95	202
Framingham, . . .	36	41	2	16	11	23	38	57	95	34	129
Holliston, . . .	40	18	2	7	13	28	42	25	67	41	108
<i>Am'ts carried forward,</i>	5,699	4,064	308	2,088	2,621	8,777	6,007	6,152	12,159	11,398	23,557

RECORDS, ETC. — *Continued.**Division 4 — Continued.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.		Light.	Heavy.	All.	Automobiles.	All Kinds.		
44	27	71	29	142	96	120	68	98	441. Salisbury Rd.	
10	67	77	23	45	326	179	74	135	442. Revere—Saugus Rd.	
16	19	35	65	110	150	129	332	214	443. Lynn—Salem Rd.	
22	22	44	56	187	208	197	342	258	444. Wenham—Beverly Rd.	
30	19	49	51	266	186	228	318	266	445. Beverly—Hamilton Rd.	
26	11	37	63	139	62	102	240	160	446. Wenham—Ipswich Rd.	
28	18	46	54	150	104	128	205	160	447. Newburyport—Ipswich Rd.	
18	13	31	69	72	57	65	194	119	448. Rowley—Newburyport Rd.	
22	19	41	59	150	142	146	296	209	449. Amesbury—Newburyport Rd. near Salisbury Sq.	
9	9	18	82	28	30	29	193	98	450. Newburyport—Portsmouth Rd., near Junction rds. Hampton and Ports- mouth.	
43	27	70	30	70	49	60	35	49	451. Malden—Lynn Rd.	
26	32	58	42	25	34	30	30	30	452. Saugus—Peabody Rd.	
29	19	48	52	45	32	38	57	46	453. Peabody—Ipswich Rd.	
20	20	40	60	4	4	4	8	6	454. Newburyport Rd.	
46	14	60	40	42	14	29	26	28	455. Melrose—Saugus Rd.	
24	36	60	40	166	275	218	200	211	456. Chelsea—Winthrop Rd.	
10	—	10	90	150	—	78	1,024	475	457. Taken by Metropolitan Park Com- mission.	
26	13	39	61	504	286	399	849	589	458. Beverly—Manchester Rd.,	
20	11	31	69	218	129	175	542	329	459. Manchester—Gloucester Rd., Beach- mont Ave.	
19	38	57	43	102	229	163	174	168	460. Rockport—Gloucester Rd., near Rock- port line.	
26	20	46	54	132	111	121	193	151	461. Gloucester—Wenham Rd.	
37	12	49	51	34	12	23	34	28	462. Ayer—Littleton Rd.	
38	35	73	27	72	74	73	37	58	463. Leominster—Ayer Rd.	
44	16	60	40	94	37	67	63	65	464. Concord Rd.	
30	28	58	42	52	53	52	50	52	465. Marlborough Rd.	
18	29	47	53	58	99	78	120	95	466. Natick Rd.	
23	30	53	47	55	80	67	83	74	467. Framingham Rd.	
29	44	73	27	46	75	60	30	47	468. Ashland Rd.	
39	23	62	38	51	33	42	36	39	469. Milford Rd.	

DAILY AVERAGES FROM TRAFFIC

Division 4 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
<i>Am'ts brought forward,</i>	5,699	4,064	308	2,088	2,621	8,777	6,007	6,152	12,159	11,398 23,557
Bellingham, . . .	59	16	-	9	4	20	59	25	84	24 108
Franklin,	32	20	-	20	9	21	32	40	72	30 102
Newton,	35	79	3	26	32	56	38	105	143	88 231
Needham,	77	44	3	22	32	52	80	66	146	84 230
Millis,	82	56	-	13	13	27	82	69	151	40 191
Bellingham, . . .	59	40	-	14	8	15	59	54	113	23 136
Bellingham (south), .	100	133	1	17	1	27	101	150	251	28 279
Boston,	108	151	8	95	36	88	116	246	362	124 486
Totals,	6,251	4,603	323	2,304	2,756	9,083	6,574	6,907	13,481	11,839 25,320

Division 5.

Provincetown, . . .	52	64	9	36	8	28	61	100	161	36 197
Wellfleet,	17	24	4	1	1	30	21	25	46	31 77
Orleans (north), . .	56	28	3	4	18	51	59	32	91	69 160
Orleans (south), . .	52	22	1	2	1	25	53	24	77	26 103
Yarmouth (south), .	174	84	2	5	27	141	176	89	265	168 433
Yarmouth (south), .	154	84	3	20	45	170	157	104	261	215 476
Barnstable (south), .	408	256	7	15	86	383	415	271	686	469 1,155
Sandwich,	44	12	-	2	12	105	44	14	53	117 175
Falmouth (north), .	59	28	1	1	24	155	60	29	89	179 268
Oak Bluffs,	70	13	8	2	14	68	78	15	93	82 175
West Tisbury, . . .	78	20	5	12	14	105	83	32	115	119 234
Bourne (north), . .	84	51	2	9	49	254	86	60	146	303 449
Westwood,	42	52	-	28	29	142	42	80	122	171 293
Wrentham,	142	63	1	13	40	135	143	76	219	175 394
North Attleborough, .	58	77	1	29	35	143	59	106	165	178 343
Milton,	36	74	2	89	18	58	38	163	201	76 277
Stoughton,	122	99	6	16	41	142	128	115	243	183 426
Brockton (west), .	44	59	1	15	34	53	45	74	119	87 206
<i>Am'ts carried forward,</i>	1,692	1,110	56	299	496	2,188	1,748	1,409	3,157	2,684 5,841

RECORDS, ETC. — *Continued.**Division 4 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.		Light.	Heavy.	All.	Automobiles.	All Kinds.		
55	23	78	22	71	33	53	21	39	470. Franklin Rd.	
31	39	70	30	39	53	45	26	37	471. Bellingham Rd.	
16	45	61	39	46	138	90	77	84	472. Newton Rd.	
35	29	64	37	96	87	92	73	84	473. Westwood Rd.	
43	36	79	21	99	91	95	35	70	474. Medway Rd.	
43	40	83	17	71	71	71	20	50	475. Caryville—Medway Rd.	
36	54	90	10	122	198	158	24	102	476. Woonsocket Rd.—Millett's blacksmith shop.	
24	51	75	25	140	324	228	108	177	477. Dedham Rd.	
26	27	53	47							

Division 5.

31	51	82	18	73	132	101	31	72	501. Truro Rd.
27	33	60	40	25	33	29	27	28	502. Eastham Rd.
37	20	57	43	71	42	57	60	59	503. Eastham—Brewster Rd.
51	23	74	26	64	32	48	23	38	504. Chatham Rd.
41	21	62	38	212	117	167	146	158	505. Barnstable—Dennis (north) Rd.
33	22	55	45	189	137	164	187	174	506. Barnstable—Dennis (south) Rd.
36	24	60	40	500	357	432	408	422	507. Hyannis center road.
25	8	33	67	53	18	36	102	64	508. Wareham—Barnstable Rd.
22	11	33	67	72	38	56	156	98	509. Buzzard's Bay—Woods Hole Rd.
45	9	54	46	94	20	58	71	64	510. Edgartown Rd.
35	14	49	51	100	42	72	104	86	511. Tisbury—Chilmark Rd.
19	13	32	68	103	79	92	263	164	512. Wareham Rd., from August 23 to August 29, inclusive.
14	27	41	59	51	105	77	149	107	513. Dedham—Norwood Rd.
36	19	55	45	172	100	138	152	144	514. Walpole Rd.
17	31	48	52	71	140	104	155	125	515. Attleborough Rd.
14	59	73	27	46	214	126	66	101	516. Boston—Quincy Rd.
30	27	57	43	154	151	153	159	156	517. Brockton—Canton Rd.
22	36	58	42	54	98	75	76	75	518. Easton Rd.

DAILY AVERAGES FROM TRAFFIC

Division 5 — Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			Automobiles.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
<i>Am'ts brought forward,</i>	1,692	1,110	56	299	496	2,188	1,748	1,409	3,157	2,684	5,841
Foxborough (south), .	48	43	—	18	21	54	48	61	109	75	184
Norton (west), .	53	70	1	34	48	93	54	104	158	141	299
Taunton (north), .	92	88	1	14	22	108	93	102	195	130	325
Seekonk, .	56	110	2	43	20	87	58	153	211	107	318
Swansea, .	40	24	1	8	7	51	41	32	73	58	131
Somerset (north), .	230	298	3	54	45	242	233	352	585	287	872
Dighton (south), .	37	25	• 1	5	12	82	38	30	68	94	162
Dartmouth, .	94	41	8	20	35	230	102	61	163	265	428
Mattapoisett, .	109	86	15	47	71	211	124	133	257	282	539
Rochester, .	62	27	1	2	5	43	63	29	92	48	140
Marion, .	152	88	4	58	51	262	156	146	302	313	615
Wareham (east), .	88	102	3	9	22	348	91	111	202	370	572
Middleborough (south), .	75	44	1	12	28	131	76	56	132	159	291
Freetown (south), .	18	23	—	8	9	49	18	31	49	58	107
Lakeville, .	64	23	—	3	11	57	64	26	90	68	158
Raynham, .	51	35	—	8	9	25	51	43	94	34	128
Bridgewater, .	80	100	1	16	31	109	81	116	197	140	337
West Bridgewater, .	117	89	1	39	33	132	118	128	246	165	411
Randolph, .	31	24	2	12	18	60	33	36	69	78	147
Holbrook, .	58	26	2	5	10	20	60	31	91	30	121
Abington (south), .	53	66	1	21	34	83	54	87	141	117	258
Whitman, .	65	78	1	19	18	39	66	97	163	57	220
Hanover, .	253	30	3	19	58	129	256	49	305	187	492
Rockland, .	184	153	4	30	54	121	188	183	371	175	546
Quiney (west), .	62	76	15	39	36	78	77	115	192	114	306
Weymouth (south), .	90	119	3	32	24	48	93	151	244	72	316
Quincy (east), .	105	164	2	71	153	312	107	235	342	465	807
Hingham, .	38	31	5	27	62	278	43	58	101	340	441
Cohasset (north), .	105	41	8	29	35	184	113	70	183	219	402
Scituate, .	136	36	5	19	77	271	141	55	196	348	544
<i>Am'ts carried forward,</i>	4,338	3,270	150	1,020	1,555	6,125	4,488	4,290	8,778	7,680	16,458

RECORDS, ETC. — *Continued.**Division 5 — Continued.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.						Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.			
Light.	Heavy.	All.		Light.	Heavy.	All.					
26	33	59	41	58	80	69	65	67	519.	Mansfield Rd.	
18	35	53	47	65	137	100	123	109	520.	Attleborough Rd.	
29	31	60	40	112	134	123	113	119	521.	Providence Rd.	
18	48	66	34	70	201	133	93	116	522.	Providence Rd.	
31	24	55	45	49	42	46	50	48	523.	Somerset Rd.	
27	40	67	33	282	463	368	249	318	524.	Fall River—Providence Rd.	
24	19	43	57	46	39	43	82	59	525.	Taunton—Somerset Rd.	
24	14	38	62	123	80	102	231	156	526.	Fall River—New Bedford Rd.	
23	25	48	52	149	175	161	245	197	527.	Wenham—New Bedford Rd.	
45	21	66	34	76	38	58	42	51	528.	Marion—Acushnet Rd.	
25	24	49	51	188	192	190	272	224	529.	Wareham—New Bedford Rd.	
16	19	35	65	110	146	127	322	209	530.	Wareham—Buzzard's Bay Rd.	
26	19	45	55	92	74	83	138	106	531.	Wareham Rd.	
17	29	46	54	22	41	31	50	39	532.	New Bedford—Middleborough Rd.	
41	17	58	42	77	34	57	59	58	533.	New Bedford—Middleborough Rd.	
40	34	74	26	62	57	59	30	47	534.	Taunton—Bridgewater Rd.	
24	34	58	42	98	153	124	122	123	535.	Middleborough Rd.	
29	31	60	40	142	169	155	144	150	536.	Bridgewater—Brockton Rd.	
23	25	48	52	40	47	43	68	54	537.	Boston—Brockton Rd.	
50	26	76	24	72	41	57	26	44	538.	Braintree—Attleborough Rd.	
21	34	55	45	65	114	89	102	94	539.	Brockton Rd.	
30	44	74	26	80	127	102	50	80	540.	Brockton—Abington—Bridgewater Rd.	
52	10	62	38	309	65	192	163	180	541.	Pembroke—Rockland Rd.	
35	34	69	31	226	241	233	152	199	542.	Hanover—Rockland Rd.	
25	38	63	37	93	152	121	99	112	543.	Boston—Brockton Rd.	
29	48	77	23	112	199	153	63	115	544.	Abington Rd.	
13	29	42	58	129	309	215	404	294	545.	South Shore—Nantasket Rd.	
10	13	23	77	52	76	64	296	161	546.	South Shore Rd.	
28	17	45	55	136	92	115	190	147	547.	South Shore Rd.	
26	10	36	64	170	72	123	303	198	548.	South Shore Rd.	

DAILY AVERAGES FROM TRAFFIC

Division 5 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
<i>Am'ts brought forward,</i>	4,338	3,270	150	1,020	1,555	6,125	4,488	4,290	8,778	7,680 16,458
Duxbury, . . .	73	33	1	8	9	75	74	41	115	84 199
Plymouth, . . .	100	71	6	25	15	155	106	96	202	170 372
Harwich, . . .	181	71	3	5	30	99	184	76	260	129 389
Nantucket, . . .	134	29	15	8	—	—	149	37	186	— 186
Acushnet, . . .	109	109	18	31	13	56	127	140	267	69 336
Falmouth (east), .	62	23	1	9	8	60	63	32	95	68 163
Barnstable (west), .	99	36	1	12	11	133	100	48	148	144 292
Freetown (west), .	44	24	—	8	3	12	44	32	76	15 91
Wareham (north), .	18	12	1	1	13	119	19	13	32	132 164
Sharon, . . .	55	14	8	7	10	43	63	21	84	53 137
Somerset (south), .	50	112	—	16	8	46	50	128	178	54 232
Totals, . . .	5,263	3,804	204	1,150	1,675	6,923	5,467	4,954	10,421	8,598 19,019

Recapitulation.

DIVISIONS.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
Division 1, . . .	1,464	688	201	618	362	1,475	1,665	1,306	2,971	1,837 4,808
Division 2, . . .	2,947	1,173	165	795	434	1,335	3,112	1,968	5,080	1,769 6,849
Division 3, . . .	2,595	1,690	209	1,144	695	2,571	2,804	2,834	5,638	3,266 8,904
Division 4, . . .	6,251	4,603	323	2,304	2,756	9,083	6,574	6,907	13,481	11,839 25,320
Division 5, . . .	5,263	3,804	204	1,150	1,675	6,923	5,467	4,954	10,421	8,598 19,019
Totals, . . .	18,520	11,958	1,102	6,011	5,922	21,387	19,622	17,969	37,591	27,309 64,900

RECORDS, ETC. — *Continued.**Division 5 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.
HORSE-DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.	
Light.	Heavy.	All.		Light.	Heavy.	All.			
37	21	58	42	89	54	72	73	73	549. South Shore Rd.
29	26	55	45	128	126	127	148	136	550. South Shore Rd. (Manomet).
47	20	67	33	222	100	163	112	142	551. Chatham—Barnstable (south) Rd.
80	20	100	—	180	49	117	—	68	552. Siasconset Rd.
38	42	80	20	153	184	168	60	123	553. New Bedford—Rochester Rd.
39	20	59	41	76	42	60	59	59	554. South County Rd.
34	16	50	50	120	63	93	125	106	555. South County Rd.
48	35	83	17	53	42	48	13	33	556. Fall River—Taunton Rd.
12	8	20	80	23	17	20	115	60	557. Middleborough—Buzzard's Bay Rd.
46	15	61	39	76	28	53	46	50	558. Foxborough Rd.
22	55	77	23	60	168	112	47	85	559. Taunton—Fall Rrver Rd.
29	26	55	45						

Recapitulation.

PERCENTAGES.				AVERAGE NUMBER OF VEHICLES.					Remarks.
HORSE-DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.	
Light.	Heavy.	All.		Light.	Heavy.	All.			
35	27	62	38	67	52	119	73	192	25 stations.
45	29	74	26	107	68	175	61	236	29 stations.
31	32	63	37	59	60	119	70	189	47 stations.
26	27	53	47	85	90	175	154	320	77 stations.
29	26	55	45	93	84	177	146	323	59 stations.
30	28	58	42	83	76	159	115	274	237 stations.

EXHIBIT C.

DAILY AVERAGES FROM TRAFFIC RECORDS TAKEN FOURTEEN HOURS

Division 1.

TOWN - CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
Williamstown, . . .	74	44	7	27	9	42	81	71	152	51 203
North Adams (south), .	81	77	6	26	20	48	87	103	190	68 258
Clarksburg, . . .	58	71	5	63	4	12	63	134	197	16 213
Adams (east), . . .	52	26	12	29	5	4	64	55	119	9 128
Cheshire, . . .	27	41	7	19	6	48	34	60	94	54 148
Pittsfield (east), . .	61	51	10	117	19	106	71	168	239	125 364
Pittsfield (west), . .	64	13	12	34	7	95	76	47	123	102 225
Richmond, . . .	28	6	3	12	3	20	31	18	49	23 72
Lee (north), . . .	65	35	9	19	6	69	74	54	128	75 203
Stockbridge (north), .	17	4	8	10	2	123	25	14	39	125 164
Lee (south), . . .	59	27	5	33	5	18	64	60	124	23 147
Lee (east), . . .	89	15	4	24	4	47	93	39	132	51 183
Great Barrington, .	57	34	15	42	7	22	72	76	148	29 177
Hinsdale, . . .	29	34	2	7	1	5	31	41	72	6 78
Windsor (Hill), . .	32	6	14	37	5	19	46	43	89	24 113
Huntington, . . .	49	24	11	30	43	58	60	54	114	101 215
Russell, . . .	13	10	2	6	21	70	15	16	31	91 122
Westfield (west), .	48	12	5	18	18	96	53	30	83	114 197
West Springfield, .	22	34	1	25	31	136	23	59	82	167 249
Agawam, . . .	46	36	1	101	4	6	47	137	184	10 194
Northampton, . . .	20	15	1	11	27	107	21	26	47	134 181
Easthampton (west), .	108	38	4	16	9	27	112	54	166	36 202
Easthampton, . . .	35	28	2	8	2	13	37	36	73	15 88
Goshen, . . .	46	5	7	24	4	25	53	29	82	29 111
Hatfield, . . .	32	14	3	14	6	32	35	28	63	38 101
Pittsfield (south), .	42	30	19	27	21	225	61	57	118	246 364
Totals, . . .	1,254	730	175	779	289	1,473	1,429	1,509	2,938	1,762 4,700

EXHIBIT C.

EACH DAY FOR ONE WEEK, BEGINNING OCT. 10, 1909, AT 7 A.M.

Division 1.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.		Light.	Heavy.	All.	Automobiles.			
40	35	75	25	117	95	106	66	92	101. North Adams Rd.	
34	40	74	26	126	137	132	88	117	102. Adams Rd.	
30	63	93	7	91	179	137	21	96	103. North Adams Rd.	
50	43	93	7	93	73	83	12	58	104. Pumpkin Hook Rd.	
23	40	63	37	49	80	65	70	67	105. Pittsfield—North Adams Rd.	
19	46	65	35	103	224	166	162	165	106. Dalton Rd.	
34	21	55	45	110	63	86	132	102	107. Pittsfield—Lebanon, N. Y., Rd.	
43	25	68	32	45	24	34	30	33	107A. Pittsfield—Richmond Rd.	
36	27	63	37	107	72	89	97	92	108. Pittsfield—Springfield Rd.	
15	9	24	76	36	19	27	162	74	109. Stockbridge—Lenox Rd.	
43	41	84	16	93	80	86	30	67	110. Stockbridge Rd.	
51	21	72	28	135	52	92	66	83	111. Jacob's Ladder Rd.	
41	43	84	16	104	101	103	38	80	112. Monterey Rd.	
40	52	92	8	45	55	50	8	35	113. Hinsdale—Dalton Rd.	
41	38	79	21	67	57	62	31	51	114. Dalton Rd. or Pittsfield—Northampton Rd.	
28	25	53	47	87	72	79	131	97	115. Russell—Chester or Pittsfield—Springfield Rd.	
12	13	25	75	22	21	21	118	55	116. Chester—Huntington or Pittsfield—Springfield Rd.	
27	15	42	58	77	40	58	148	89	117. Russell Rd.	
9	24	33	67	33	79	57	217	113	118. Westfield—Springfield or Pittsfield—Springfield Rd.	
24	71	95	5	68	183	128	13	88	119. Springfield—Hartford Rd.	
12	14	26	74	30	35	33	174	82	120. Holyoke—Northampton Rd.	
55	27	82	18	162	72	115	47	91	121. Northampton Rd.	
42	41	83	17	54	48	51	19	40	122. Holyoke St.	
48	26	74	26	77	39	57	38	50	123. Main St. or Northampton—Pittsfield Rd.	
35	28	63	37	51	37	44	49	46	124. Greenfield—Northampton Rd.	
17	16	33	67	88	76	82	320	165	125. Hancock or Pittsfield—Lebanon N. Y., Rd.	
30	32	62	38							

DAILY AVERAGES FROM TRAFFIC

Division 2.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
Lunenburg, . . .	118	56	9	71	19	56	127	127	254	75 329
Townsend, . . .	84	33	1	10	21	35	85	43	128	56 184
Ashby, . . .	70	29	1	22	12	26	71	51	122	38 160
Westminster, . . .	26	10	3	10	15	74	29	20	49	89 138
Gardner (south), .	28	7	1	6	16	69	29	13	42	85 127
Winchendon, . . .	125	47	2	30	6	19	127	77	204	25 229
Baldwinville, . . .	127	47	—	27	21	24	127	74	201	45 246
Baldwinville, . . .	118	40	1	23	16	39	119	63	182	55 237
Athol,	102	58	7	42	27	57	109	100	209	84 293
Orange,	71	47	2	13	12	31	73	60	133	43 176
Erving (west), . .	14	1	—	1	2	32	14	2	16	34 50
Montague (east), .	27	5	2	6	4	40	29	11	40	44 84
Greenfield (east), .	71	39	1	19	16	61	72	58	130	77 207
Montague city, . .	24	21	—	52	6	11	24	73	97	17 114
Greenfield,	70	22	5	14	12	77	75	36	111	89 200
Colrain,	57	8	3	19	3	14	60	27	87	17 104
Buckland,	100	26	4	46	2	15	104	72	176	17 133
Charlemont,	143	43	13	62	5	11	156	105	261	16 277
Deerfield,	60	30	1	12	10	61	61	42	103	71 174
Deerfield,	146	40	4	107	8	33	150	147	297	41 338
Sunderland,	126	36	3	96	6	25	129	132	261	31 292
Whately,	30	9	6	8	10	39	36	17	53	49 102
Hadley,	68	57	8	34	8	73	76	91	167	81 248
South Hadley, . . .	60	121	6	82	12	31	66	203	260	43 312
Granby,	102	118	4	22	13	31	106	140	246	44 290
Belchertown,	224	48	23	18	15	25	247	66	313	40 353
Ware (south), . . .	24	12	1	5	6	12	25	17	42	18 60
Ware,	62	71	3	23	5	14	65	94	150	19 178
Barre,	101	44	10	22	4	40	111	66	177	44 221
Northfield,	266	79	7	55	20	49	273	134	407	69 476
Totals,	2,644	1,204	131	957	332	1,124	2,775	2,161	4,936	1,456 6,392

RECORDS, ETC. — *Continued.**Division 2.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.	
Light.	Heavy.	All.	Automobiles.	Light.	Heavy.	All.	Automobiles.	All Kinds.	
39	39	78	22	184	169	176	97	149	201. Fitchburg Rd.
46	23	69	31	123	57	89	73	83	202. Groton—Ashby Rd.
44	32	76	24	103	68	85	49	72	203. Fitchburg Rd.
21	14	35	65	42	27	34	115	62	204A. Fitchburg traffic.
23	10	33	67	42	17	29	110	57	204B. Westminster or Greenfield—Fitchburg Rd.
55	34	89	11	184	103	142	32	103	205. Maple St.
52	30	82	18	184	99	140	58	111	206A. Gardner traffic.
50	27	77	23	173	84	126	71	107	206B. Phillipston traffic.
37	34	71	29	158	133	145	109	132	207. Orange Rd. or Main St., Greenfield—Fitchburg Rd.
42	34	76	24	106	80	92	56	80	208. Orange, Erving or Greenfield—Fitchburg Rd.
28	4	32	68	20	3	11	44	23	209A. Millers Falls Rd. or Greenfield—Fitchburg Rd.
35	13	48	52	42	15	28	57	38	209B. Turners Falls—Millers Falls Rd.
35	28	63	37	104	77	90	100	94	210A. Greenfield Rd., October 11 to October 17, inclusive.
21	64	85	15	35	97	67	22	52	210B. Montague City Rd., October 11 to October 17, inclusive.
38	18	56	44	109	48	77	115	91	211. Bernardston Rd.
58	26	84	16	87	36	60	22	47	212. Shelburne Falls Rd.
54	37	91	9	151	96	122	22	87	213. Ashfield—Shelburne Falls Rd.
56	38	94	6	226	140	181	21	125	214. Shelburne Falls—North Adams Rd.
35	24	59	41	88	56	72	92	79	215. Greenfield Rd., October 11 to October 17, inclusive.
44	44	88	12	217	196	206	53	153	216A. Sunderland Rd.
44	45	89	11	187	176	181	40	132	216B. South Deerfield—Amherst Rd.
35	17	52	48	53	23	37	64	46	217. Greenfield—Northampton Rd.
30	37	67	33	110	121	116	105	112	218. Northampton—Amherst Rd.
21	65	86	14	96	271	187	56	141	219A. South Hadley Village Rd.
37	48	85	15	154	187	171	57	131	219B. Granby—Holyoke Rd.
70	19	89	11	358	88	217	52	160	220. Granby or Belchertown—Holyoke Rd.
42	28	70	30	36	23	29	23	27	221. Palmer Rd.
36	53	89	11	94	125	110	25	81	222. Gilbertville Rd.
50	30	80	20	161	88	123	57	100	223. Barre Rd.
57	28	85	15	396	179	282	90	215	224. Main St.
43	34	77	23						

DAILY AVERAGES FROM TRAFFIC

Division 3.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.			Automobiles.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.		
Ashland (Southboro'),	47	14	2	14	8	21	49	28	77	29	106
Southborough (north),	11	7	—	3	5	20	11	10	21	25	46
Northborough (east), .	25	23	—	7	21	132	25	30	55	153	208
Northborough (south),	16	10	—	35	2	3	16	45	61	5	66
Northborough (south),	8	7	—	33	—	1	8	40	48	1	49
Northborough (west), .	19	20	1	12	20	159	20	32	52	179	231
Shrewsbury, . .	87	94	4	69	25	207	91	163	254	232	486
West Boylston, . .	71	42	23	46	33	131	94	88	182	164	346
Sterling, . . .	101	31	3	36	20	94	104	67	171	114	285
Sterling, . . .	49	21	1	24	9	22	50	45	95	31	126
Princeton, . . .	81	11	5	22	2	5	86	33	119	7	126
Rutland, . . .	85	29	3	42	8	41	88	71	159	49	208
Holden (center), . .	53	39	3	17	21	56	56	56	112	77	189
Worcester (Holden), .	71	63	60	44	36	104	131	107	238	140	378
Grafton, . . .	64	58	1	25	24	51	65	83	148	75	223
Grafton, . . .	44	48	—	15	10	21	44	63	107	31	138
Spencer, . . .	31	13	1	24	19	104	32	37	69	123	192
Leicester, . . .	60	74	1	60	22	125	61	134	195	147	342
Brookfield, . . .	29	18	1	7	11	98	30	25	55	109	164
Brookfield, . . .	27	21	2	3	1	4	29	24	53	5	58
West Brookfield, . .	34	23	1	7	12	91	35	30	65	103	168
West Brookfield, . .	3	14	—	1	—	—	3	15	18	—	18
Warren, . . .	49	56	1	17	23	100	50	73	123	123	246
Palmer, . . .	32	15	1	18	8	110	33	33	66	113	184
Palmer, . . .	21	11	1	10	2	11	22	21	43	13	56
Brimfield, . . .	54	9	—	2	1	1	54	11	65	2	67
Wilbraham, . . .	17	25	2	12	24	126	19	37	56	150	206
Chicopee, . . .	43	139	3	93	32	67	46	232	278	99	377
Chicopee, . . .	50	197	3	97	10	69	53	294	347	79	426
East Longmeadow, .	34	56	1	55	3	15	35	111	146	18	164
Monson, . . .	32	17	1	4	4	15	33	21	54	19	73
<i>Am'ts carried forward,</i>	1,348	1,205	125	854	416	2,004	1,473	2,059	3,532	2,420	5,952

RECORDS, ETC. — *Continued.**Division 3.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	
Light.	Heavy.	All.		Light.	Heavy.	All.	All Kinds.	
46	27	73	27	71	37	53	38	48
24	22	46	54	16	13	15	32	21
12	14	26	74	36	40	38	199	94
24	68	92	8	23	60	42	6	30
16	82	98	2	12	53	33	1	22
9	14	23	77	29	43	36	233	104
19	33	52	48	132	217	176	302	220
27	25	52	48	136	117	126	213	156
36	24	60	40	151	89	119	148	129
40	36	76	24	73	60	66	40	57
68	26	94	6	124	44	83	9	57
42	34	76	24	127	95	110	64	94
30	30	60	40	81	75	78	100	86
34	28	62	38	190	143	165	182	171
29	37	66	34	94	111	103	97	101
33	45	78	22	64	84	74	40	62
17	19	36	64	46	49	48	160	87
18	39	57	43	88	179	135	191	154
18	15	33	67	43	33	38	142	74
50	41	91	9	42	32	37	6	26
21	17	38	62	51	40	45	134	76
17	83	100	—	4	20	12	—	8
20	30	50	50	73	97	86	160	111
18	18	36	64	48	44	46	153	83
39	38	77	23	32	28	30	17	25
81	16	97	3	78	15	45	3	30
9	18	27	73	28	49	39	195	93
12	62	74	26	67	309	193	128	170
12	69	81	19	77	392	241	102	193
21	68	89	11	51	148	101	23	74
45	29	74	26	48	28	37	25	33
								326. Palmer—Monson Rd.

DAILY AVERAGES FROM TRAFFIC

Division 3 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
<i>Am'ts brought forward,</i>	1,348	1,205	125	854	416	2,004	1,473	2,059	3,532	2,420	5,952
Sturbridge, . . .	72	76	1	44	5	22	73	120	193	27	220
Southbridge, . . .	20	14	2	8	4	14	22	22	44	18	62
Dudley, . . .	151	81	4	49	12	30	155	130	285	42	327
Webster, . . .	91	34	4	21	11	34	95	55	150	45	195
Charlton, . . .	37	13	2	11	2	8	39	24	63	10	73
Charlton, . . .	27	9	1	4	2	10	28	13	41	12	53
Oxford, . . .	-	-	-	-	-	-	-	-	-	-	-
Auburn, . . .	21	11	-	17	9	39	21	28	49	48	97
Millbury, . . .	69	51	11	40	21	43	80	91	171	64	235
Auburn, . . .	58	87	3	64	11	42	61	151	212	53	265
Millbury, . . .	64	18	2	14	2	10	66	32	98	12	110
Sutton, . . .	136	92	-	22	1	5	136	114	250	6	256
Douglas, . . .	56	15	-	5	1	8	56	20	76	9	85
Uxbridge, . . .	-	-	-	-	-	-	-	-	-	-	-
Paxton, . . .	96	39	16	82	7	40	112	121	233	47	280
Leominster, . . .	26	24	6	8	16	44	32	32	64	60	124
Totals, . . .	2,272	1,769	177	1,243	520	2,353	2,449	3,012	5,461	2,873	8,334

Division 4.

Medford, . . .	54	169	12	132	10	70	66	301	367	80	447
Stoneham (north), .	43	37	-	20	32	179	43	57	100	211	311
Andover (south), .	27	11	3	10	19	122	30	21	51	141	192
Andover (north), .	163	187	6	81	106	164	169	268	437	270	707
Watertown, . . .	87	188	8	80	52	134	95	268	363	186	549
Weston, . . .	217	110	8	70	77	257	225	180	405	334	739
Sudbury (south), .	72	31	3	30	24	212	75	61	136	236	372
Winchester, . . .	75	62	5	23	50	151	80	85	165	201	366
Woburn, . . .	33	32	2	26	15	68	35	58	93	83	176
Burlington (center), .	39	26	2	40	33	77	41	66	107	110	217
<i>Am'ts carried forward,</i>	810	853	49	512	418	1,434	859	1,365	2,224	1,852	4,076

RECORDS, ETC. — *Continued.**Division 3 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.	
Light.	Heavy.	All.		Light.	Heavy.	All.	Automobiles.		
33	55	88	12	106	160	134	35	100	327. Southbridge Rd..
36	35	71	29	32	29	31	23	28	328. Charlton Rd.
47	40	87	13	224	173	198	55	148	329. Webster Rd.
48	28	76	24	138	73	104	58	88	330. Thompson Rd.
53	33	86	14	57	32	44	13	33	331. Charlton—Depot Rd.
53	24	77	23	41	17	28	16	24	332. Worcester—Southbridge Rd.
—	—	—	—	—	—	—	—	—	333. Worcester—Southbridge Rd.; road closed to traffic.
22	29	51	49	30	37	34	62	44	334. Worcester—Webster Rd.
34	39	73	27	116	121	119	83	106	335. Main St. or Worcester Rd.
23	57	80	20	88	201	147	69	120	336. Worcester—Webster Rd.
60	29	89	11	96	43	68	16	50	337. Sutton Rd.
53	44	97	3	197	152	173	8	116	338. Douglas Rd.
66	23	89	11	81	27	53	12	38	339. Uxbridge Rd.
—	—	—	—	—	—	—	—	—	340. Worcester—Providence Rd.; road closed to traffic.
40	30	83	17	162	161	162	61	127	341. Worcester—Barre Rd.
26	26	52	48	46	43	44	78	56	342. Fitchburg—Sterling Rd.
29	36	65	35						

Division 4.

15	67	82	18	96	401	255	104	202	401. Boston—Lawrence Rd.
14	18	32	68	62	76	69	274	141	402. Reading Rd. (Main St.).
16	11	27	73	43	28	35	183	87	403. North Reading Rd. (Main St.).
24	38	62	38	245	367	303	351	320	404. Lawrence Rd.
17	49	66	34	138	367	252	242	249	405. Waltham—Brighton Rd.
30	25	55	45	326	240	281	434	334	406. Waltham—Marlborough Rd.
20	16	36	64	109	81	94	307	168	407. Marlborough—Waltham Rd.
22	23	45	55	116	113	115	261	165	408. Arlington—Woburn Rd.
20	33	53	47	51	77	65	108	80	409. Winchester—Burlington Rd.
19	30	49	51	59	88	74	143	98	410. Billerica Rd.

DAILY AVERAGES FROM TRAFFIC

Division 4 — Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
<i>Am'ts brought forward,</i>	810	853	49	512	418	1,434	859	1,365	2,224	1,852 <i>4,076</i>
Chelmsford (south), .	79	67	1	31	29	88	80	98	178	117 <i>295</i>
Tewksbury (center), .	69	34	2	10	19	67	71	44	115	86 <i>201</i>
Lexington, . . .	26	35	1	23	14	66	27	58	85	80 <i>165</i>
Bedford, . . .	28	8	1	7	2	11	29	15	44	13 <i>57</i>
Lexington, . . .	69	70	7	45	34	128	76	115	191	162 <i>353</i>
Concord (south), .	48	54	4	34	63	152	52	88	140	215 <i>355</i>
Concord (north), .	69	37	3	14	45	113	72	51	123	158 <i>281</i>
Acton (east), . . .	53	21	1	20	29	80	54	41	95	109 <i>204</i>
Littleton, . . .	40	15	3	5	19	67	43	20	63	86 <i>149</i>
Littleton, . . .	12	16	1	4	6	41	13	20	33	47 <i>80</i>
Groton, . . .	64	41	1	4	11	43	65	45	110	54 <i>164</i>
Acton (west), . . .	60	58	—	14	6	9	60	72	132	15 <i>147</i>
Boxborough, . . .	35	19	1	20	2	18	36	39	75	20 <i>95</i>
Harvard, . . .	57	32	—	25	9	24	57	57	114	33 <i>147</i>
Westford, . . .	20	8	3	8	4	23	23	16	39	27 <i>66</i>
Chelmsford, . . .	43	38	1	10	4	20	44	48	92	24 <i>116</i>
Chelmsford, . . .	142	107	1	42	7	40	143	149	292	47 <i>339</i>
Chelmsford (north), .	86	71	1	38	36	69	87	109	196	105 <i>301</i>
Lowell (north), . .	71	20	7	12	68	154	78	32	110	222 <i>332</i>
Tyngsborough, . .	45	17	1	7	25	92	46	24	70	117 <i>187</i>
Dracut, . . .	53	25	—	11	1	5	53	36	89	6 <i>95</i>
Tewksbury, . . .	23	6	1	3	6	26	24	9	33	32 <i>65</i>
Lawrence, . . .	370	446	23	105	101	177	393	551	944	278 <i>1,222</i>
Methuen, . . .	29	32	1	19	15	55	30	51	81	70 <i>151</i>
North Andover, . .	15	14	1	5	12	17	16	19	35	29 <i>64</i>
North Andover, . .	57	32	2	16	14	29	59	48	107	43 <i>150</i>
Middleton, . . .	53	27	—	6	7	29	53	33	86	36 <i>122</i>
Haverhill (east), . .	50	17	1	16	4	9	51	33	84	13 <i>97</i>
Amesbury, . . .	29	17	2	9	7	26	31	26	57	33 <i>90</i>
Amesbury, . . .	37	41	—	19	16	33	37	60	97	49 <i>146</i>
<i>Am'ts carried forward,</i>	2,642	2,278	120	1,094	1,033	3,145	2,762	3,372	6,134	4,178 <i>10,312</i>

RECORDS, ETC. — *Continued.**Division 4 — Continued.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.	Automobiles.	Light.	Heavy.	All.	Automobiles.	All Kinds.		
27	33	60	40	116	131	124	152	133	411. Lowell—Billerica Rd.	
35	22	57	43	103	59	80	112	91	412. Lowell—Wilmington Rd.	
16	35	51	49	39	77	59	104	75	413. At Bedford line, Bedford Rd.	
51	26	77	23	42	20	31	17	26	414. Carlisle Rd.	
21	33	54	46	110	153	133	210	160	415. Waltham Rd.	
15	25	40	60	75	117	97	279	161	416. Lexington Rd.	
26	18	44	56	104	68	86	205	127	417. Acton Rd.	
26	20	46	54	78	55	66	142	92	418. Lowell Rd.	
29	14	43	57	62	27	44	112	67	419. South of Littleton Common.	
16	25	41	59	19	27	23	61	36	420. North Littleton Railroad Station—town road.	
40	27	67	33	94	60	76	70	74	421. Townsend Rd.	
41	49	90	10	87	96	92	19	67	422. Concord—Harvard Rd.	
38	41	79	21	52	52	52	26	43	423. Acton—Harvard Rd.	
39	39	78	22	83	76	79	43	67	424. Boxborough Rd.	
35	24	59	41	33	21	27	35	30	425. Chelmsford—Littleton Rd.	
38	41	79	21	64	64	64	31	53	426. West of center, Littleton Rd.	
42	44	86	14	207	199	203	61	153	427. East of center, Lowell Rd.	
29	36	65	35	126	145	136	136	136	428. Lowell—Nashua Rd.	
23	10	33	67	113	43	76	289	150	429. Pawtucket Boulevard.	
25	13	38	62	67	32	49	152	85	430. Lowell—Nashua Rd.	
56	38	94	6	77	48	62	8	43	431. Lowell—Methuen Rd.	
37	14	51	49	35	12	23	42	29	432. Lowell—Andover Rd.	
32	45	77	23	570	736	655	361	553	433. Totals on cards, October 10-14, inclusive, reduced 20 per cent.	
20	34	54	46	43	68	56	91	68	434. Lawrence—Haverhill Rd.	
25	30	55	45	23	25	24	38	29	435. Osgood St. at Town Hall.	
39	32	71	29	86	64	74	56	68	436. Lawrence Rd, east of Green St., on highway.	
43	27	70	30	77	44	60	47	55	437. Lawrence—Andover Rd.	
53	34	87	13	74	44	58	17	44	438. Haverhill—Merrimac Rd.	
34	29	63	37	45	35	40	43	41	439. Challis Hill, Merrimac Rd.	
25	41	66	34	54	80	67	64	66	440. Salisbury line.	

DAILY AVERAGES FROM TRAFFIC

Division 4 — Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
<i>Am'ts brought forward,</i>	2,642	2,278	120	1,094	1,033	3,145	2,762	3,372	6,134	4,178	10,312
West Newbury, . . .	127	64	1	100	16	42	128	164	292	58	350
Saugus,	-	-	-	-	-	-	-	-	-	-	-
Salem,	44	55	3	43	35	224	47	98	145	259	404
Beverly (north), . . .	113	94	12	75	55	102	125	169	294	157	451
Wenham (center), . . .	168	102	11	33	49	114	179	135	314	163	477
Hamilton,	94	27	3	17	19	81	97	44	141	100	241
Rowley,	100	79	3	17	26	71	103	96	199	97	296
Newbury,	43	40	1	20	11	69	44	60	104	80	184
Salisbury,	104	103	5	36	32	90	109	139	248	122	370
Salisbury,	28	10	1	16	9	38	29	26	55	47	102
Saugus (Newburyport turnpike).	42	26	1	9	4	25	43	35	78	29	107
Lynnfield (Newburyport turnpike).	12	14	-	5	5	26	12	19	31	31	62
Danvers (Newburyport turnpike).	18	9	1	5	3	37	19	14	33	40	73
Ipswich (Newburyport turnpike).	3	2	-	2	-	4	3	4	7	4	11
Melrose,	30	15	2	3	2	23	32	18	50	25	75
Revere (east),	67	183	2	82	57	67	69	265	334	124	458
Saugus River bridge, .	69	-	6	-	112	528	75	-	75	640	715
Beverly (east),	500	169	71	124	92	519	571	293	864	611	1,475
Gloucester (south), . .	117	57	2	18	36	115	119	75	194	151	345
Gloucester,	49	76	8	60	5	22	57	136	193	27	220
Essex,	81	73	1	21	15	42	82	94	176	57	233
Ayer,	21	4	-	3	6	25	21	7	28	31	59
Shirley,	33	30	1	8	8	24	34	38	72	32	104
Stow,	64	9	1	15	17	60	65	24	89	77	166
Hudson,	39	25	2	17	12	35	41	42	83	47	130
Wellesley,	61	75	5	31	68	180	66	106	172	248	420
Natick (west),	35	43	3	13	18	94	38	56	94	112	206
Framingham,	29	42	-	19	11	22	29	61	90	33	123
Holliston,	30	37	1	6	15	39	31	43	74	54	128
<i>Am'ts carried forward,</i>	4,763	3,741	267	1,892	1,771	5,863	5,030	5,633	10,663	7,634	18,297

RECORDS, ETC. — *Continued.**Division 4 — Continued.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks..	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.		
Light.	Heavy.	All.		Light.	Heavy.	All.				
36	47	83	17	186	219	203	75	158	441. Salisbury Rd.	
-	-	-	-	-	-	-	-	-	442. Revere—Saugus Rd.; road closed to traffic.	
12	24	36	64	68	131	101	336	182	443. Lynn—Salem Rd.	
28	37	65	35	181	226	204	204	204	444. Wenham—Beverly Rd.	
38	28	66	34	260	180	218	212	216	445. Beverly—Hamilton Rd.	
40	18	58	42	140	59	98	130	109	446. Wenham—Ipswich Rd.	
35	32	67	33	149	128	138	126	134	447. Newburyport—Ipswich Rd.	
24	33	57	43	64	80	72	104	83	448. Rowley—Newburyport Rd.	
29	38	67	33	158	185	172	159	167	449. Amesbury—Newburyport Rd., near Salisbury Sq.	
26	28	54	46	42	35	38	61	46	450. Newburyport—Portsmouth Rd., near junction roads, Hampton and Portsmouth.	
40	33	73	27	62	47	54	38	48	451. Malden—Lynn Rd.	
19	31	50	50	17	25	22	40	28	452. Saugus—Peabody Rd.	
26	19	45	55	28	19	23	52	33	453. Peabody—Ipswich Rd.	
28	36	64	36	4	5	5	5	5	454. Newburyport Rd.	
43	24	67	33	46	24	35	32	34	455. Melrose—Saugus Rd.	
15	58	73	27	100	352	232	161	207	456. Chelsea—Winthrop Rd.	
10	-	10	90	109	-	52	832	324	457. Metropolitan Park System.	
38	20	58	42	829	390	600	794	668	458. Beverly—Manchester Rd.	
35	22	57	43	172	100	135	196	156	459. Manchester—Gloucester Rd., Beachmont Av.	
26	62	88	12	83	181	134	35	100	460. Rockport—Gloucester Rd., near Rockport line.	
35	40	75	25	119	125	122	74	105	461. Gloucester—Wenham Rd.	
36	12	48	52	30	9	19	40	27	462. Ayer—Littleton Rd.	
33	36	69	31	49	51	50	42	47	463. Leominster—Ayer Rd.	
39	14	53	47	94	32	62	100	75	464. Concord Rd.	
32	32	64	36	59	56	58	61	59	465. Marlborough Rd.	
16	25	41	59	96	142	119	322	190	466. Natick Rd.	
18	27	45	55	55	75	65	146	93	467. Framingham Rd.	
24	49	73	27	42	81	63	43	56	468. Ashland Rd.	
24	34	58	42	45	57	51	70	58	469. Milford Rd.	

DAILY AVERAGES FROM TRAFFIC

Division 4 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
<i>Am'ts brought forward,</i>	4,763	3,741	267	1,892	1,771	5,863	5,030	5,633	10,663	7,634	18,297
Bellingham, . . .	34	22	—	14	3	19	34	36	70	22	92
Franklin, . . .	44	29	4	18	6	25	48	47	95	31	126
Newton, . . .	28	49	4	28	31	78	32	77	109	109	218
Needham, . . .	65	28	5	23	15	66	70	51	121	81	202
Millis, . . .	61	56	—	21	11	25	61	77	138	36	174
Bellingham, . . .	62	50	1	24	7	15	63	74	137	22	159
Bellingham (south), .	100	145	—	23	5	14	100	168	268	19	287
Boston, . . .	37	114	4	74	26	85	41	188	229	111	340
Totals, . . .	5,194	4,234	285	2,117	1,875	6,190	5,479	6,351	11,830	8,065	19,895

Division 5.

Provincetown, . . .	20	15	1	3	2	6	21	18	39	. 8	47
Wellfleet, . . .	14	22	1	5	1	6	15	27	42	7	49
Orleans (north), .	35	26	1	2	4	8	36	28	64	12	76
Orleans (south), .	48	13	—	7	1	3	48	20	68	4	72
Yarmouth (south), .	139	96	—	9	13	30	139	105	244	43	287
Yarmouth (south), .	98	63	—	30	14	28	98	93	191	42	233
Barnstable (south), .	220	155	4	15	31	95	224	170	394	126	520
Sandwich, . . .	36	15	1	1	6	27	37	16	53	33	86
Falmouth (north), .	38	18	1	5	7	17	39	23	62	24	86
Oak Bluffs, . . .	32	23	—	2	6	16	32	25	57	22	79
West Tisbury, . . .	47	16	4	9	10	16	51	25	76	26	102
Bourne (north), . .	23	16	1	3	11	23	24	19	43	34	77
Bourne (north), . .	34	28	2	5	15	47	36	33	69	62	131
Westwood, . . .	44	47	2	23	23	113	46	70	116	136	252
Wrentham, . . .	107	43	7	15	30	88	114	58	172	118	290
North Attleborough, .	55	64	1	23	21	121	56	87	143	142	285
Milton, . . .	24	80	2	86	11	42	26	166	192	53	245
Stoughton, . . .	77	52	3	20	12	84	80	72	152	96	248
<i>Am'ts carried forward,</i>	1,091	792	31	263	218	770	1,122	1,055	2,177	988	3,165

RECORDS, ETC. — *Continued.**Division 4 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.		
Light.	Heavy.	All.		Light.	Heavy.	All.			
37	39	76	24	49	48	49	29	42	470. Franklin Rd.
38	37	75	25	70	63	66	40	57	471. Bellingham Rd.
15	35	50	50	46	103	76	142	99	472. Newton Rd.
35	25	60	40	101	68	84	105	91	473. Westwood Rd.
35	44	79	21	88	103	96	47	79	474. Medway Rd.
40	46	86	14	91	99	95	29	72	475. Caryville—Medway Rd.
35	59	94	6	145	224	186	25	130	476. Woonsocket Rd., from October 13 to October 18, inclusive.
12	55	67	33	59	251	159	144	154	477. Dedham Rd.
28	32	60	40						

Division 5.

45	38	83	17	30	24	27	10	21	501. Truro Rd.
31	55	86	14	22	36	29	9	22	502. Eastham Rd.
47	37	84	16	52	37	44	16	34	503. Eastham—Brewster Rd.
67	28	95	5	70	27	47	5	33	504. Chatham Rd.
48	37	85	15	202	140	169	56	130	505. Barnstable—Dennis (north) Rd.
42	40	82	18	142	124	132	55	105	506. Barnstable—Dennis (south) Rd.
43	33	76	24	325	227	273	164	235	507. Hyannis Center Rd.
43	19	62	38	54	21	37	43	39	508. Wareham—Barnstable Rd.
45	27	72	28	57	31	43	31	39	509. Buzzards Bay—Woods Hole Rd.
40	32	72	28	46	33	40	29	36	510. Edgartown Rd.
50	25	75	25	74	33	53	34	46	511. Tisbury—Chilmark Rd.
31	25	56	44	35	25	30	44	35	512A. Wareham Rd.
28	25	53	47	52	44	48	81	59	512B. Wareham Rd.
18	28	46	54	67	93	81	177	114	513. Dedham—Norwood Rd.
39	20	59	41	165	77	119	153	131	514. Walpole Rd.
20	30	50	50	81	116	99	185	129	515. Attleborough Rd.
11	68	79	21	38	221	133	69	111	516. Boston—Quincy Rd.
32	29	61	39	116	96	105	124	112	517. Brockton—Canton Rd.

DAILY AVERAGES FROM TRAFFIC

Division 5—Continued.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
<i>Am'ts brought forward,</i>	1,991	792	31	263	218	770	1,122	1,055	2,177	988 3,165
Brockton (west), .	42	76	1	17	25	52	43	93	136	77 213
Foxborough (south), .	42	39	1	8	11	46	43	47	90	57 147
Norton (west), .	36	54	7	23	12	36	43	77	120	48 168
Taunton (north), .	65	88	1	7	29	106	66	95	161	135 296
Seekonk, . . .	45	90	3	30	22	76	48	120	168	98 266
Swansea, . . .	23	19	4	11	5	13	27	30	57	18 75
Somerset (north), .	212	309	8	67	29	180	220	376	596	209 805
Dighton (south), .	24	25	1	6	7	48	25	31	56	55 111
Dartmouth, . . .	61	34	1	26	24	111	62	60	122	135 257
Mattapoisett, . . .	87	66	12	28	28	131	99	94	193	159 352
Rochester, . . .	70	30	—	5	9	18	70	35	105	27 132
Marion, . . .	114	85	—	55	25	82	114	140	254	107 361
Wareham (east), .	42	89	—	26	28	105	42	115	157	133 290
Middleborough (south),	66	52	1	12	16	59	67	64	131	75 206
Freetown (south), .	17	24	1	8	8	36	18	32	50	44 94
Lakeville, . . .	46	25	—	3	10	40	46	28	74	50 124
Raynham, . . .	56	31	1	9	4	22	57	40	97	26 123
Bridgewater, . . .	57	74	2	22	16	70	59	96	155	86 241
West Bridgewater, .	113	82	2	46	26	98	115	128	243	124 367
Randolph, . . .	18	17	1	6	13	75	19	23	42	88 130
Holbrook, . . .	50	22	1	5	5	16	51	27	78	21 99
Abington, . . .	44	51	1	18	24	67	45	69	114	91 205
Whitman, . . .	49	79	1	21	16	33	50	100	150	49 199
Hanover, . . .	166	22	1	20	28	52	167	42	209	80 289
Rockland, . . .	154	138	2	26	40	64	156	164	320	104 424
Quincy (west), .	57	82	4	49	24	65	61	131	192	89 281
Weymouth (south), .	99	140	2	26	13	36	101	166	267	49 316
Quincy (east), .	71	226	2	106	68	146	73	332	405	214 619
Hingham, . . .	30	38	—	33	19	117	30	71	101	136 237
Cohasset (north), .	90	35	5	26	24	81	95	61	156	105 261
<i>Am'ts carried forward,</i>	3,137	2,934	97	1,008	826	2,851	3,234	3,942	7,176	3,677 10,853

RECORDS, ETC.—Continued.

Division 5—Continued.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE-DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.	All Kinds.		
Light.	Heavy.	All.		Light.	Heavy.	All.				
20	44	64	36	62	124	94	100	96	518. Easton Rd.	
29	32	61	39	62	63	63	74	67	519. Mansfield Rd.	
26	46	72	28	62	103	83	62	76	520. Attleborough Rd.	
22	32	54	46	96	126	112	175	134	521. Providence Rd.	
18	45	63	37	70	160	117	127	120	522. Providence Rd.	
36	40	76	24	39	40	40	23	34	523. Somerset Rd.	
27	47	74	26	319	501	414	271	364	524. Fall River—Providence Rd.	
23	28	51	49	36	41	39	71	50	525. Taunton—Somerset Rd.	
24	23	47	53	90	80	85	175	116	526. Fall River—New Bedford Rd.	
28	27	55	45	144	125	134	206	159	527. Wareham—New Bedford Rd.	
53	27	80	20	101	47	73	35	60	528. Marion—Acushnet Rd.	
31	39	70	30	165	187	176	139	163	529. Wareham—New Bedford Rd.	
14	40	54	46	61	153	109	173	131	530. Wareham—Buzzards Bay Rd.	
33	31	64	36	97	85	91	97	93	531. Wareham Rd.	
19	34	53	47	26	43	35	57	43	532. New Bedford—Middleborough Rd.	
37	23	60	40	67	37	51	65	56	533. New Bedford—Middleborough Rd.	
46	33	79	21	83	53	67	34	56	534. Taunton—Bridgewater Rd.	
24	40	64	36	86	128	108	112	109	535. Middleborough Rd.	
31	35	66	34	167	171	169	161	166	536. Bridgewater—Brockton Rd.	
15	18	33	67	28	31	29	114	59	537. Boston—Brockton Rd.	
52	27	79	21	74	36	54	27	45	538. Braintree—Abington Rd.	
22	34	56	44	65	92	79	118	93	539. Brockton Rd.	
25	50	75	25	72	133	104	64	90	540. Brockton, Abington—Bridgewater Rd.	
58	14	72	28	242	56	145	104	131	541. Pembroke—Rockland Rd.	
37	39	76	24	226	219	222	135	192	542. Hanover—Abington Rd.	
22	46	68	32	88	175	133	115	127	543. Boston—Brockton Rd.	
32	53	85	15	147	221	185	64	143	544. Abington Rd.	
12	54	66	34	106	442	281	278	280	545. South Shore—Nantasket Rd.	
13	30	43	57	44	95	70	177	107	546. South Shore Rd.	
37	23	60	40	137	81	108	137	118	547. South Shore Rd.	

DAILY AVERAGES FROM TRAFFIC

Division 5 — Concluded.

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
<i>Am'ts brought forward,</i>	3,137	2,934	97	1,008	826	2,851	3,234	3,942	7,176	3,677	10,853
Seituate, . . .	98	31	3	17	34	71	101	48	149	105	254
Duxbury, . . .	80	34	2	20	10	39	82	54	136	49	185
Plymouth, . . .	51	52	2	29	14	41	53	81	134	55	189
Harwich, . . .	80	44	—	4	13	11	80	48	128	24	152
Nantucket, . . .	76	33	1	3	—	—	77	36	113	—	113
Acushnet (south), .	123	96	14	46	10	49	137	142	279	59	338
Falmouth (east), .	41	31	1	9	5	14	42	40	82	19	101
Barnstable (west), .	83	36	1	23	5	26	84	59	143	31	174
Freetown (west), .	51	45	10	10	20	22	61	55	116	42	158
Wareham (north), .	13	12	1	2	7	38	14	14	28	45	73
Sharon, . . .	36	11	6	5	4	40	42	16	58	44	102
Somerset (south), .	61	112	1	21	4	33	62	133	195	37	232
Kingston, . . .	107	58	1	33	7	56	108	91	199	63	262
Dartmouth, . . .	145	101	2	74	20	83	147	175	322	103	425
Totals, . . .	4,182	3,630	142	1,304	979	3,374	4,324	4,934	9,258	4,353	13,611

Recapitulation.

DIVISIONS.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
Division 1, . . .	1,254	730	175	779	280	1,473	1,429	1,500	2,938	1,762	4,700
Division 2, . . .	2,644	1,204	131	957	332	1,124	2,775	2,161	4,936	1,456	6,392
Division 3, . . .	2,272	1,769	177	1,243	520	2,353	2,449	3,012	5,461	2,873	8,334
Division 4, . . .	5,194	4,234	285	2,117	1,875	6,190	5,479	6,351	11,830	8,065	19,895
Division 5, . . .	4,182	3,630	142	1,304	979	3,374	4,324	4,934	9,258	4,353	13,611
Totals, . . .	15,546	11,567	910	6,400	3,995	14,514	16,456	17,967	34,423	18,509	52,932

RECORDS, ETC. — *Concluded.**Division 5 — Concluded.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.	
HORSE-DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.		
Light.	Heavy.	All.		Light.	Heavy.	All.			
40	19	59	41	147	64	103	137	115	
44	29	73	27	119	72	94	64	84	
28	43	71	29	77	108	93	71	86	
52	32	84	16	116	64	89	31	69	
68	32	100	-	111	48	79	-	51	
41	42	83	17	199	189	194	77	153	
42	39	81	19	61	53	57	25	46	
48	34	82	18	122	79	99	40	79	
38	35	73	27	88	73	81	55	72	
19	19	38	62	20	19	19	58	33	
41	16	57	43	61	21	40	57	46	
27	57	84	16	90	177	135	48	105	
41	35	76	24	157	121	138	82	118	
35	41	76	24	213	233	223	134	192	
32	36	68	32					561. Dartmouth—Westport Rd.	

Recapitulation.

PERCENTAGES.				AVERAGE NUMBER OF VEHICLES.				Remarks.	
HORSE-DRAWN.			Automobiles.	HORSE-DRAWN.			Automobiles.		
Light.	Heavy.	All.		Light.	Heavy.	All.			
30	32	62	38	55	58	113	68	181	
43	34	77	23	93	72	165	48	213	
29	36	65	35	54	67	121	64	185	
28	32	60	40	71	83	154	104	258	
32	36	68	32	70	80	150	70	220	
31	34	65	35	69	75	144	77	221	

26 stations.
30 stations.
45 stations.
77 stations.
62 stations.
240 stations.

EXHIBIT D.

DAILY AVERAGES FROM TRAFFIC RECORDS TAKEN FOURTEEN HOURS

Night Observations

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.		All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.	All.	Automobiles.	
Medford,	4	23	-	11	2	6	4	34	38	8	46
Stoneham,	3	2	-	2	7	18	3	4	7	25	32
Watertown,	19	48	1	21	15	31	20	69	89	46	135
Winchester,	5	7	-	4	6	12	5	11	16	18	34
Lexington,	6	10	-	8	3	7	6	18	24	10	34
Saugus,	4	32	1	13	3	11	5	45	50	14	64
Beverly (north), . .	15	10	-	4	13	35	15	14	29	48	77
Revere (east), . . .	29	14	1	8	7	33	30	22	52	40	92
Lynn,	15	1	-	-	24	146	15	1	16	170	186
Beverly (east), . . .	28	14	4	11	18	76	32	25	57	94	151
Gloucester (south), .	18	4	-	1	5	40	18	5	23	45	68
Boston,	8	15	-	3	6	11	8	18	26	17	43
Totals,	154	180	7	86	109	426	161	266	427	535	962

Metropolitan Park

Milton,	268	205	16	117	167	514	284	322	606	681	1,287
Lynn,	244	-	34	-	213	1,212	278	-	278	1,425	1,703
Revere,	121	-	3	-	214	963	124	-	124	1,177	1,301
Everett,	110	-	3	-	291	755	113	-	113	1,046	1,159
Somerville,	230	167	13	125	245	801	243	292	535	1,046	1,581
Totals,	973	372	69	242	1,130	4,245	1,042	614	1,656	5,375	7,031

EXHIBIT D.

EACH DAY FOR ONE WEEK, BEGINNING AUG. 22, 1909, AT 7 A.M.
from 9 P.M. to 7 A.M.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.					Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.		Automobiles.	All Kinds.			
Light.	Heavy.	All.		Light.	Heavy.	All.	Automobiles.	All Kinds.		
9	74	83	17	31	155	109	18	58	401. Boston—Lawrence Rd.	
9	13	22	78	23	18	20	55	40	402. Reading Rd. (Main St.).	
15	51	66	34	154	314	254	102	169	405. Waltham—Brighton Rd.	
15	32	47	53	38	50	46	40	43	408. Arlington—Woburn Rd.	
18	53	71	29	46	82	69	22	43	415. Waltham Rd.	
8	70	78	22	38	205	143	31	80	442. Revere—Saugus Rd.	
20	18	38	62	115	64	83	107	96	444. Wenham—Beverly Rd.	
33	24	57	43	231	100	149	89	115	456. Chelsea—Winthrop Rd.	
8	1	9	91	115	5	46	378	233	457. Metropolitan Park System.	
21	17	38	62	246	114	163	209	189	458. Beverly—Manchester Rd.	
27	7	34	66	138	23	66	100	85	459. Beaumont Av., Manchester—Gloucester Rd.	
18	42	60	40	62	82	74	38	54	477. Dedham Rd.	
17	28	45	55							

Commission.

22	25	47	53	137	262	183	63	92	1. Mattapan bridge.
16	—	16	84	134	—	84	133	121	2. Lynn Shore Drive.
9	—	9	91	60	—	37	110	93	3. Saugus River bridge.
10	—	10	90	54	—	34	97	83	4. Malden River bridge.
15	19	34	66	117	238	162	97	112	5. Wellington bridge, Middlesex Fells.
15	9	24	76						

DAILY AVERAGES FROM TRAFFIC

Boston Park

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
Commonwealth Av., .	212	67	84	38	254	1,837	296	105	401	2,091	2,492
Jamaica Plain, .	259	12	34	28	109	655	293	40	333	764	1,097
Dorchester, . . .	145	30	18	12	81	149	163	42	205	230	435
Totals, . . .	616	109	136	78	444	2,641	752	187	939	3,085	4,024

Newton.

Washington St., . . .	88	40	6	30	68	173	94	70	164	241	405
Commonwealth Av., .	97	64	9	40	99	409	106	104	210	508	718
Washington and Wal-nut sts. Walnut St., . . .	143	276	7	67	67	112	150	343	493	179	672
Totals, . . .	100	177	8	35	53	81	108	212	320	134	454
Totals, . . .	428	557	30	172	287	775	458	729	1,187	1,062	2,249

DAILY AVERAGES FROM TRAFFIC RECORDS TAKEN FOURTEEN HOURS

Metropolitan Park

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.				
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.	
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.			
Milton,	273	230	16	132	162	534	289	362	651	696	1,347
Lynn,	150	-	12	-	172	450	162	-	162	622	784
Revere,	60	-	3	-	167	439	63	-	63	606	669
Everett,	69	-	6	-	112	528	75	-	75	640	715
Somerville,	156	164	21	89	163	620	177	253	430	783	1,213
Totals,	708	394	58	221	776	2,571	766	615	1,381	3,347	4,728

RECORDS, ETC. — *Concluded.**Department.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.	
HORSE- DRAWN.		Automobiles.		HORSE-DRAWN.		Automobiles.			
Light.	Heavy.	All.	Automobiles.	Light.	Heavy.	All.	All Kinds.		
12	4	16	84	118	169	128	203	186	
26	4	30	70	117	65	106	74	82	
37	10	47	53	65	68	65	23	32	
18	5	23	77						

Newton.

23	17	40	60	82	38	55	91	72	1.
15	15	30	70	92	57	71	192	128	2.
22	51	73	27	130	188	166	68	120	3.
24	46	70	30	94	116	108	51	81	4.
20	32	52	48						

EACH DAY FOR ONE WEEK, BEGINNING OCT. 10, 1909, AT 7 A.M.

Commission.

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.	
HORSE- DRAWN.		Automobiles.		HORSE-DRAWN.		Automobiles.			
Light.	Heavy.	All.	Automobiles.	Light.	Heavy.	All.	All Kinds.		
21	27	48	52	189	294	236	104	143	
20	—	20	80	106	—	59	93	83	
9	—	9	91	41	—	23	91	71	
10	—	10	90	49	—	27	96	76	
15	21	36	64	116	206	156	117	128	
16	13	29	71						

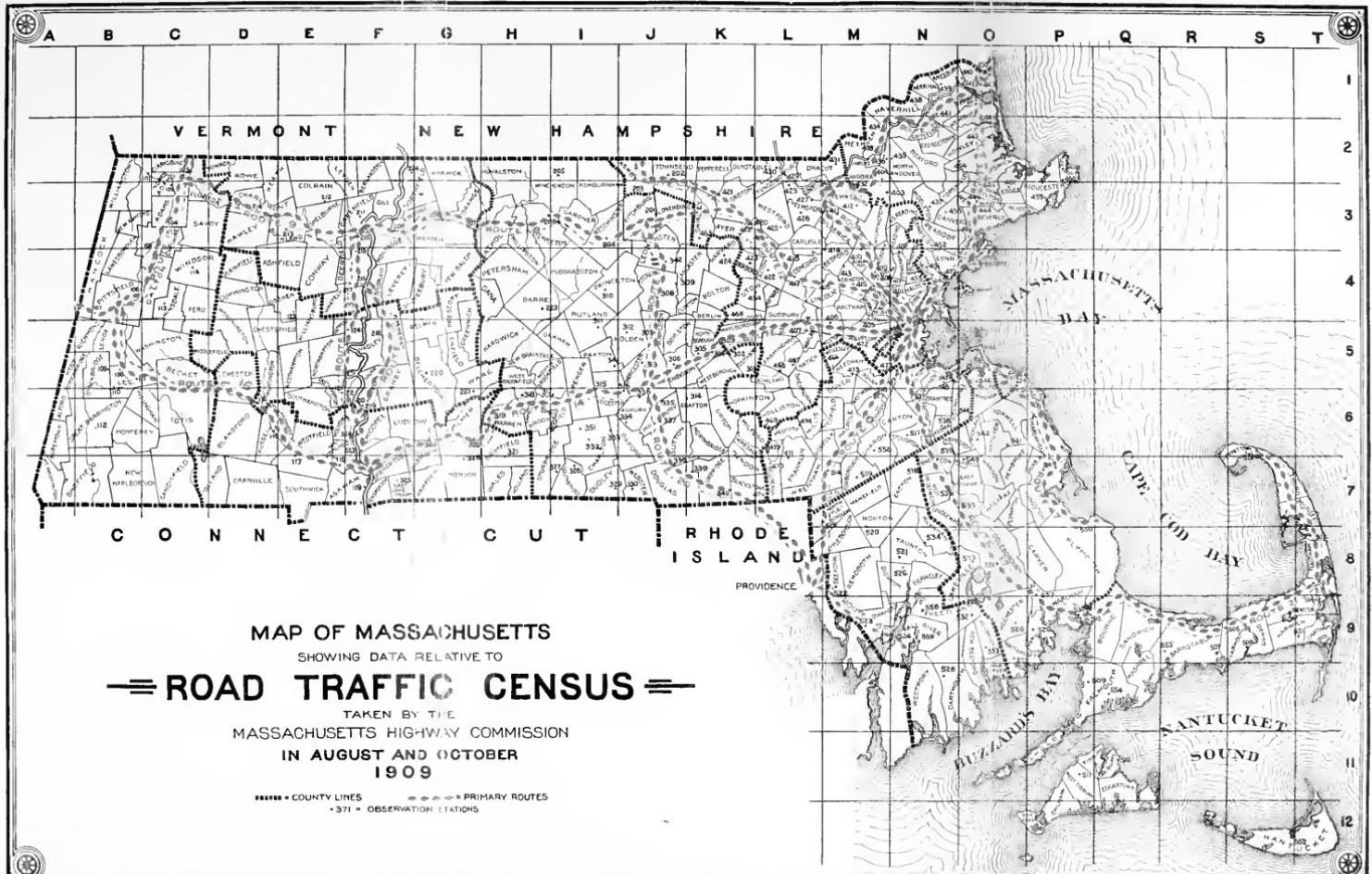
DAILY AVERAGES FROM TRAFFIC

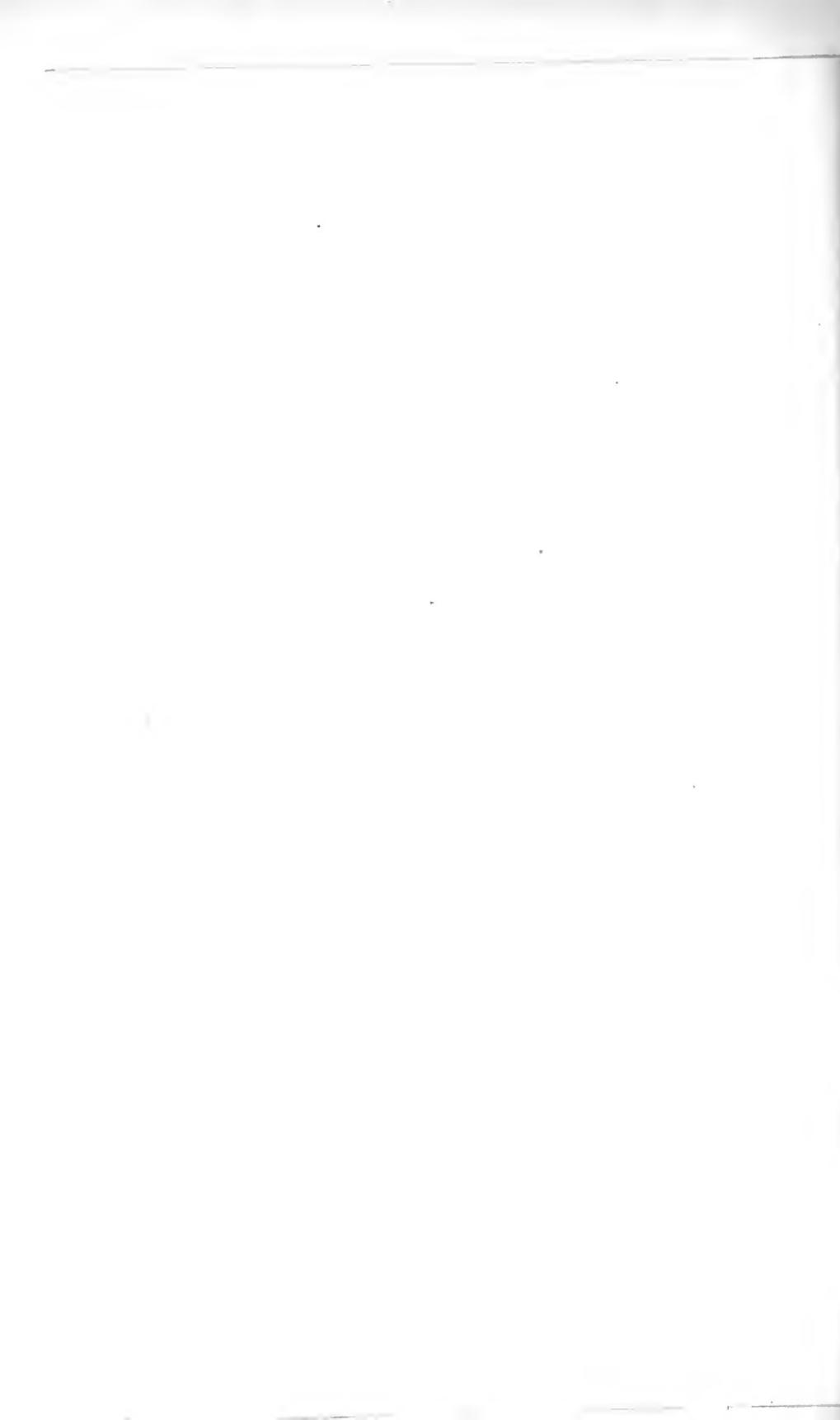
Boston Park

TOWN — CITY.	HORSE-DRAWN VEHICLES.				AUTOMOBILES.		TOTALS.			
	SINGLE HORSE.		TWO OR MORE HORSE.		Runabouts.	Touring Cars.	HORSE-DRAWN.		Automobiles.	All Kinds.
	Light.	Heavy.	Light.	Heavy.			Light.	Heavy.		
Commonwealth Av., .	394	93	194	9	376	1,929	588	102	690	2,305 2,995
Jamaica Plain, .	177	87	48	42	172	527	225	129	354	699 1,053
Dorchester, .	115	33	14	14	85	152	129	47	176	237 413
Totals, . . .	686	213	256	65	633	2,608	942	278	1,220	3,241 4,461

Newton.

Washington St., . .	83	86	8	30	51	120	91	116	207	171 378
Commonwealth Av., .	43	34	5	10	83	393	48	44	92	476 568
Totals, . . .	126	120	13	40	134	513	139	160	299	647 946





RECORDS, ETC. — *Concluded.**Department.*

PERCENTAGES.				PERCENTAGES OF AVERAGE OF ALL STATIONS.				Station Number and Remarks.	
HORSE- DRAWN.			Automobiles.	HORSE-DRAWN.			All Kinds.		
Light.	Heavy.	All.		Light.	Heavy.	All.			
19	3	22	78	187	110	170	213	202	
21	12	33	67	72	139	87	65	71	
31	12	43	57	41	51	43	22	28	
21	6	27	73						

Newton.

24	31	55	45	130	145	138	53	80	1.
8	8	16	84	60	55	61	147	120	2.
15	17	32	68						

APPENDIX L.

RELATING TO ANALYSIS OF OILS, TARS, ETC.

REPORT OF CHEMIST.

BOSTON, MASS., Dec. 28, 1909.

To the Massachusetts Highway Commission.

GENTLEMEN:—Since August, 1908, analytical work to determine the nature and value for road work of tar and asphaltic bodies has been carried on by the commission. From time to time reports of the results of experimental laboratory work and investigations have been made by me to the secretary of the commission, and as a result of this experimental work certain specifications were elaborated early in 1909 stating certain tests which refined tars, asphaltic oils and solid asphalts must pass in order to be accepted and used in the work of the commission. Since the work was begun 688 samples of bituminous materials have been analyzed, divided as follows:—

- 298 preparations or mixtures containing tar.
- 313 samples of asphaltic oils.
- 50 asphalts.
- 27 samples of genasco, glutrin, sarco, etc.

Of the above samples, 30 were laboratory mixtures made to study certain points, information in regard to which was deemed of value.

The results of practically all these analyses are summarized in the following tables. The tables show generally the number of samples included, the average analysis and the maximum and minimum analyses.

Following are the averages of the determinations of the principal kinds of road materials during different periods. Some samples have been received, however, not properly described, being marked simply "oil," "tar," or "oil asphalt," etc., and of course could not be and are not included in the averages given.

The first two tables illustrate the variation occurring in crude tars obtained from different gas plants, and indicate the difficulties manufacturers must experience in making a uniform tar preparation.

Crude Coal Tar.

[11 samples.]

	Specific Gravity.	PER CENT. DISTILLATE. (DEGREES C.)			Per Cent. insoluble in Carbon Bisulphide.
		Below 170°.	170°-270°.	270°-360°.	
Average,	1.22	2.1	12.2	5.2	23.6
Maximum,	1.26	3.5	16.0	8.5	35.1
Minimum,	1.19	.3	8.3	3.4	17.4

Water Gas Tar.

[9 samples.]

Average,	1.09	9.0	17.4	11.9	2.4
Maximum,	1.13	46.6	37.4	18.3	8.1
Minimum,	1.06	-	6.1	7.0	-

The two following tables show the analytical results obtained by the analysis of tarvia No. 5 from the Barrett Manufacturing Company, the first table being of analyses of samples received from Sept. 1, 1908, to April 1, 1909, and the second of analyses of samples received from April 1, 1909, to Dec. 20, 1909:—

Tarvia No. 5.

[16 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Per Cent. insoluble in Carbon Bisulphide.
Average,	1.21	23.5	13.6
Maximum,	1.24	42.9	17.5
Minimum,	1.19	11.0	9.6

Tarvia No. 5.

[22 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Viscosity, 21° F.	Per Cent. insoluble in Carbon Bisulphide.	Per Cent. evaporated, 21 Hours, 100° C.
Average,	1.22	17.7	130	14.6	8.2
Maximum,	1.27	24.0	280	30.6	12.6
Minimum,	1.20	10.9	85	12.3	3.2

The two following tables give the average analyses of samples of tarvia No. 7 from the Barrett Manufacturing Company received at the laboratory, and also of samples of refined tar marked as made "according to the Massachusetts highway specifications." There has apparently been an improvement in the quality of tarvias received this year over those received during 1908.

Tarvia No. 7.

[9 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Viscosity, 212° F.	Per Cent. insoluble in Carbon Bisulphide.	Per Cent. evaporated, 21 Hours, 100° C.
Average,	1.23	15.1	232	18.4	5.4
Maximum,	1.24	21.9	360	23.9	7.1
Minimum,	1.21	10.0	125	13.7	3.7

Refined Tar, according to Massachusetts Highway Specifications.

[12 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Viscosity, 212° F.	Per Cent. insoluble in Carbon Bisulphide.	Per Cent. evaporated, 21 Hours, 100° C.
Average,	1.21	16.4	138	13.0	6.9
Maximum,	1.22	23.8	170	15.3	8.3
Minimum,	1.18	14.7	120	11.0	5.1

The three following tables show average analyses of samples of tarite, so called, from the American Tar Company. The first table is of samples received from Sept. 1, 1908, to April 1, 1909; the second is of samples received from April 1 to July 27, 1909; and the third is of samples received from July 27 to Dec. 20, 1909. During July the minimum viscosity called for by the specifications was increased, and the samples of tarites received after this date showed decided improvement over those received previous to this change in the specifications.

Tarite.

[13 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Per Cent. insoluble in Carbon Bisulphide.
Average,	1.25	15.8	25.6
Maximum,	1.28	36.9	31.9
Minimum,	1.23	4.4	20.3

Tarite.

[13 samples.]

	Specific Gravity.	Per Cent. distilling below 360° C.	Viscosity, 212° F.	Per Cent. insoluble in Carbon Bisulphide.	Per Cent. evaporated, 21 Hours, 100° C.
Average,	1.19	19.9	136	9.6	6.1
Maximum,	1.22	30.0	310	16.8	10.9
Minimum,	1.17	12.7	55	4.4	3.4

Tarite.

[24 samples.]

Average,	1.21	15.4	347	12.5	3.9
Maximum,	1.24	25.6	960	18.1	5.4
Minimum,	1.18	6.4	180	8.1	1.7

The following table shows the results of analyses of 17 samples of genasco, so called, from the Barber Asphalt Company. It was impossible to determine the viscosity of many of these samples of genasco because, when heated to 100° C., a portion of the sample became fluid and the rest remained pasty, this apparently being due to the natural asphalt present not being completely soluble at this temperature in the flux used. The analyses show that these samples contained a larger percentage of bodies insoluble in carbon bisulphide than any other asphalt compound examined during the year. The greater part of this insoluble residue is mineral, and is due to the natural asphalt used in this preparation.

Genasco.

[17 samples.]

	Specific Gravity.	Viscosity, 212° F.	PER CENT. INSOLUBLE IN—	
			Petroleum Ether.	Carbon Bisulphide.
Average,	1.02	-	23.5	2.6
Maximum,	1.03	-	35.2	4.3
Minimum,	1.01	1,440	12.2	0.4

The following tables show the results of the analyses of the product of the Gulf Refining Company, called fluxing oil in 1908 and asphalt oil A during 1909. The 1908 product was heavier and apparently better than much of that received during 1909 under the name of asphalt oil A. The first table shows the analyses of the fluxing oil, so called, while the second shows the analyses of the asphalt oil A, so called. Many samples of asphalt oil A frothed when heated to 100° C., while this was not observed in any of the 11 samples of fluxing oil examined during 1908.

Fluxing Oil.

[11 samples.]

	Specific Gravity.	Per Cent. insoluble in Petroleum Ether.
Average, . . . . . . . . . . .	.979	5.4
Maximum, . . . . . . . . . . .	.987	6.6
Minimum, . . . . . . . . . . .	.969	3.0

Asphalt Oil A.

[110 samples.]

	Specific Gravity.	Viscosity, 212° F.	Per Cent. insoluble in Petroleum Ether.
Average, . . . . . . . . . . .	.972	252	4.9
Maximum, . . . . . . . . . . .	.980	485	9.4
Minimum, . . . . . . . . . . .	.955	190	2.1

During 1908 only 2 samples of standard macadam binder, from the Standard Oil Company, were received and analyzed. These 2 samples were much thinner than those received this year, and those received late in 1909 were generally heavier and thicker than those received earlier in the season, this being due apparently to the efforts of the company to sell a product within the Highway Commission's specifications.

Standard Macadam Binder (1908).

[2 samples.]

	Specific Gravity.	Viscosity, 212° F.	Per Cent. insoluble in Petroleum Ether.
Average,	-	-	-
Maximum, . . . . .	.956	-	1.40
Minimum, . . . . .	.948	-	.36

Standard Macadam Binder (1909).

[31 samples.]

Average, . . . . .	.974	410	7.9
Maximum, . . . . .	.983	575	11.4
Minimum, . . . . .	.956	220	1.7

The samples of asphalt oil A received during 1909 and those of standard macadam binder received during the same year were, as far as could be judged from the chemical and physical tests made, of about the same value.

Of the solid asphalts received, the greater proportion were from the Gulf Refining Company, and the analyses of as many as could be identified from the certificates attached to the samples are shown in the following averages. The principal differences in these samples of asphalt are in their physical properties. Undoubtedly the brittle ones are the most satisfactory to use on account of the greater ease with which they can be handled on the road.

SOLID ASPHALTS.

A Asphalt.

[16 samples.]

	Specific Gravity.	Per Cent. insoluble in Petroleum Ether.
Average,	1.02	28.3
Maximum,	1.05	39.6
Minimum,	1.00	22.1

B Asphalt.

[4 samples.]

Average,	1.02	30.8
Maximum,	1.03	32.3
Minimum,	1.01	29.1

C Asphalt.

[1 sample.]

	1.02	31.8
--	------	------

No. 1 Asphalt.

[1 sample.]

	1.14	29.5
--	------	------

No. 2 Asphalt.

[2 samples.]

	1.08	27.4
--	------	------

No. 3 Asphalt.

[2 samples.]

	1.01	26.8
--	------	------

Summarizing all these analyses, it may be said that as far as we can judge at the present time, from analytical, physical and chemical data alone, the average values given in the tables repre-

sent the best samples of the various types of tar and asphaltic compounds so far used by the commission.

There is a great difference of opinion, however, at present in regard to methods of analysis of tars and asphaltic bodies, and the meaning or value of the different tests used in this and other laboratories. As our laboratory work and study have progressed, it has become evident to us that while our methods of analysis of tar and refined tar are fairly satisfactory, the methods used for the examination of asphaltic bodies do not give as complete information in regard to these bodies as is desirable. Many methods in use in other laboratories and those proposed by the special committee of the American Society of Civil Engineers are, in our opinion, open to the same or other criticisms. It appears from our investigations of methods that many of the tests promulgated by different persons or committees are unnecessary and valueless, and it has been our constant aim to continue throughout the year special investigating work in the hope of finally obtaining methods of analysis that should be entirely satisfactory. It has become evident, for example, that little of value is learned by one or two methods practiced by us and included in the methods of the special committee of the American Society, but knowledge of this negative character is valuable, and can, of course, be gained only by the experience we have had and by comparison of the work of different laboratories.

In the work on asphaltic oils, etc., determinations of specific gravity and viscosity are undoubtedly of value, but beyond this what is most needed is not tests for paraffine, important as this may be, or tests for the solubility of the sample in cold carbon tetra chloride, etc., but a method which will give the per cent. of asphaltic bodies, as distinguished from the fluxing bodies, of the nature of lubricating oils present in such semi-solid binders as asphalt oil A, standard macadam binder, etc. Much thought has been expended on this problem and various experiments made which we believe tended to the development of a method for determining this important point. After much work we have concluded that perhaps the most promising way as yet is an indirect method, which we are now trying to perfect. This method simply determines the amount of asphaltene that is formed, by prolonged heating of the material under examination at 250° C., the formation of this asphaltene, giving, to a certain extent, a measurement of the asphalt primarily present that can be so converted by heat. In this work it was found that certain of the semi-solid binders,

when heated in an oven at a temperature of 250° from eighteen to twenty-one hours, reached a condition in which the residue changed little, if any, in weight, and the asphaltene was increased very materially over that in the original sample.

The following table illustrates the results of the treatment in this way of samples of asphalt oil A and of standard macadam binder, etc. The asphaltene is determined in the usual way, and the increase from that primarily present shows to a certain extent, as stated, the amount of asphaltic bodies present that can be so converted.

Lawrence Number.	SAMPLE.	ORIGINAL SAMPLE.			RESULTS OBTAINED BY HEATING TO 250° C., EXTRACTING WITH PETROLEUM ETHER, HEATING EXTRACT, EXTRACTING AGAIN, ETC. (PER CENT.).		
		Specific Gravity.	Viscosity. ¹	Per Cent. Asphaltene.	Loss.	Asphaltene.	Insoluble in Carbon Bisulphide.
698	N. J. oil, . . .	.982	490	9.2	21.0	72.5	6.5
700	S. O. oil, . . .	.964	267	5.5	26.1	63.5	10.4
690	S. O. oil, . . .	.961	239	4.5	26.8	63.5	9.7
695	Asphalt oil A, . .	.972	205	3.9	42.0	56.3	1.7
696	Asphalt oil A, . .	.971	334	4.8	41.4	53.5	5.1
704	Asphalt oil A, . .	.972	267	5.4	35.6	63.6	.8
697	Asphalt oil A, . .	.972	216	4.9	41.9	57.6	.5

¹ By Lawrence viscosimeter.

If the values in the last three columns be recalculated, leaving out the asphaltene in the sample at the start, the results are as follows:—

Law- rence Number.	SAMPLE.	Per Cent. Loss.	Per Cent. Asphaltene.	Per Cent. Insoluble in Carbon Bisul- phide.
698	N. J. oil,	23.1	69.7	7.2
700	S. O. oil,	27.6	61.4	11.0
690	S. O. oil,	28.1	61.8	10.1
695	Asphalt oil A,	43.7	54.6	1.7
696	Asphalt oil A,	43.5	51.1	5.4
704	Asphalt oil A,	37.6	61.5	.9
697	Asphalt oil A,	44.1	55.4	.5

This sample of the experimental laboratory work being carried on illustrates the intricacies of the subject from an analytical point of view, but enough knowledge of improved methods has been gained during the year to make the laboratory work of the future upon asphaltic bodies of more value than that of the past year.

Respectfully submitted,

H. W. CLARK,
Chemist.

APPENDIX M.

APPROPRIATIONS.

Appropriations for the Construction and Repair of State Highways.

1894, chapter 497, section 8,	\$300,000 00
1895, chapter 347, section 3,	400,000 00
1896, chapter 481, section 3,	600,000 00
1897, chapter 340, section 1,	800,000 00
1898, chapter 539, section 1,	400,000 00
1899, chapter 396, section 1,	500,000 00
1900, chapter 442, section 1,	500,000 00
1901, chapter 269, section 1,	500,000 00
1902, chapter 246, section 1,	500,000 00
1903, chapter 280, section 1,	¹ 2,250,000 00
1907, chapter 446, section 1,	¹ 2,500,000 00
<hr/>	
	\$9,250,000 00

Appropriations for the Salaries and Expenses of the Commission, paid from the Treasury of the Commonwealth.

1898, chapter 497, section 1,	\$14,300 00
1899, chapter 367, section 1,	28,500 00
1900, chapter 141, section 1,	28,500 00
1901, chapter 451, section 1,	33,750 00
1902, chapter 67, section 1,	33,750 00
1903, chapters 14 and 485, section 1,	² 43,950 00
1904, chapters 19 and 461, section 1,	² 39,300 00
1905, chapters 36, 431 and 480, section 1,	² 46,150 00
1906, chapters 36 and 140, section 1,	² 49,514 14
1907, chapter 157, section 1,	³ 66,950 00
1908, chapter 212, section 1,	³ 76,300 00
1909, chapter 127,	⁴ 47,300 00

¹ To cover expenses of construction for a period of five years.

² Includes expenses of automobile department.

³ Includes expenses of moth suppression and automobile department in part.

⁴ Includes expense of moth suppression.

Appropriations for Maintenance, paid from the Treasury of the Commonwealth.

1903, chapter 280, section 2,	\$40,000 00
1904, chapter 316, section 1,	50,000 00
1905, chapter 36, section 1,	60,000 00
1906, chapter 36, section 1,	64,166 66
1907, chapter 157, section 1,	100,000 00
1908, chapters 212 and 657, section 1,	150,000 00
1909, chapters 127 and 493, section 1,	250,000 00

PART II.

FOURTH ANNUAL REPORT

OF THE

MASSACHUSETTS HIGHWAY COMMISSION,

FOR THE

FISCAL YEAR ENDING NOVEMBER 30, 1909,

ON

COMPANIES ENGAGED IN THE TRANSMISSION OF
INTELLIGENCE BY ELECTRICITY.

CHAPTER 433, Acts of 1906.

ANNUAL REPORT OF THE MASSACHUSETTS HIGHWAY COMMISSION CONCERNING COMPANIES ENGAGED IN THE TRANS- MISSION OF INTELLIGENCE BY ELEC- TRICITY.

During the fiscal year 1909 the commission held many conferences between certain subscribers and the officials of the New England Telephone and Telegraph Company relating either to individual complaints or to the rates established in particular places or between certain localities. While these conferences were not in the nature of formal hearings required by law, the commission deemed it best to hold such conferences, acting merely semi-officially, and it believes that much good has been accomplished thereby.

Many times a clear explanation of the facts in the case, made by representatives of the telephone company, has sufficed.

ANNUAL RETURNS.

The annual returns for the year ending June 30, 1909, which the several companies engaged in the transmission of intelligence by electricity in this State are required by law to submit to the commission, were received with more than usual promptness, and in many instances showed a marked improvement in form and make-up.

Abstracts of these annual returns are shown in Appendix B, under the same classifications as in previous years, namely, large telephone companies, nonoperating and small telephone companies, and telegraph companies.

It will be noted that in the returns submitted by the three telegraph companies of the postal telegraph system, the gross earnings and operating expenses are but fractions of the amounts shown by these companies last year; and in this connection the following correspondence between the treasurer of the companies and the secretary of the commission is given:—

NEW YORK, July 1, 1909.

Mr. A. B. FLETCHER, *Secretary, Massachusetts Highway Commission,
15 Ashburton Place, Boston, Mass.*

DEAR SIR:—Referring to the reports made by the Commercial Union Telegraph Company, the New England Telegraph Company of Massachusetts and Postal Telegraph-Cable Company of Massachusetts to the Massachusetts Highway Commission for the year ending June 30, 1908, I beg to state that these blanks were filled out and the gross earnings from operation were given in each case under the column headed "within the State." There was another column headed "whole system," but as the three companies referred to above have no property outside of the State of Massachusetts, the figures were given as stated above. These companies transfer business to other companies outside of the State of Massachusetts, and the business handed over to these other companies was included in the figures given you in the report. In this way I presume your commission thought the receipts were derived wholly from business done between points within the State, but this is not true.

We should be pleased to have you return to us the reports which we sent to you for the year ending June 30, 1908, and let us make the correction. In any future reports we will furnish you with figures separately, namely, the receipts from the business done by each of these companies between points within the State of Massachusetts and the receipts from business destined to points outside of the State, and known as inter-state business.

Yours truly,

THEODORE L. CUYLER, Jr., *Treasurer.*

JULY 9, 1909.

THEODORE L. CUYLER, Jr., *Treasurer, Postal Telegraph-Cable Company,
253 Broadway, New York, N. Y.*

DEAR SIR:—I wish to acknowledge the receipt of your letter of the 1st inst., with regard to the annual returns made by the Commercial Union Telegraph Company, the New England Telegraph Company of Massachusetts and the Postal Telegraph-Cable Company of Massachusetts for the year ending June 30, 1908.

You are correct in assuming that the commission thought the gross earnings shown in these returns represent solely the earnings of these companies; and there was nothing in the returns to indicate otherwise. It is only the gross earnings of these companies that the commission desires to know, and not earnings taken in by the companies to be handed over to companies within or without the State, and, therefore, your earnings, such as they are, should properly be shown under the columns "within the State." To make it plainer, what the commission desires is the receipts of the companies for business originating and terminating at points within the State, that proportion of the business originating within the State and terminating outside the State which ends at the State line, and that proportion of the business originating outside the State and terminating within the State which begins at the State line; that is to say, we want the exact earnings of the companies.

If, as you state, the returns have shown earnings which belong to other companies, it would seem that the expense accounts of these companies must have been enhanced to an equal degree, and these also should be corrected.

I am sending you herewith six blank forms of the return for 1908, and request that you have three of them filled out with the corrected figures and returned to this office.

It will not be possible to send back to you the annual returns which you have filed, as these have been already published in the report of the commission.

Yours truly,

A. B. FLETCHER, *Secretary.*

A comparative statement of statistical information, giving the total figures of all telephone companies for the years ending June 30, 1909 and 1908, has been drawn off and is presented herewith.

State of Massachusetts.

	1909.	1908.	Increase.	Decrease.
Number of subscribers,	218,642	199,951	18,691	-
Number of instruments,	225,628	206,466	19,162	-
Number of operators,	3,423	3,229	194	-
Number of pay stations,	6,653	6,358	295	-
Gross receipts,	\$9,999,459	\$9,467,167	\$532,292	-
Operating expenses,	\$7,366,439	\$7,175,824	\$190,615	-
Net earnings,	\$2,633,020	\$2,291,343	\$341,677	-
Per cent. of expenses to earnings, . . .	73.7	75.8	-	2.1
Number of subscribers on party lines, . .	184,393	169,033	15,360	-
Number of subscribers on single lines, . .	34,249	30,575	3,674	-
Underground system:—				
Conduit, feet,	3,215,744	3,190,728	25,016	-
Duct, feet,	16,248,854	16,170,932	77,922	-
Cable, feet,	7,288,549	7,211,058	77,491	-
Wire, miles,	353,121	335,269	17,852	-
Submarine system:—				
Cable, feet,	56,814	65,715	-	8,901
Wire, miles,	702	925	-	223
Overhead system:—				
Pole line, miles,	9,138	10,292	-	1,154
Iron wire, miles,	40,315	66,436	-	26,121
Copper wire, miles,	132,695	140,670	-	7,975

The gross receipts represent solely the earnings (less rebates and discounts) from telephone traffic, and the total data here shown refer only to conditions within the State.

It is interesting to note that the ratio of expenses to earnings has decreased 2.1 per cent., that the underground installation has been greatly increased; and this latter fact, taken in connection with the diminished overhead installation, indicates an intent on the part of the companies to improve general conditions in the thickly populated districts.

INVESTIGATION OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY CONCERNING ITS PROPERTY, RATES FOR SERVICE, ETC.

In March of last year the commission received from the engineers employed by it, Messrs. D. C. & Wm. B. Jackson, an inventory and appraisal of the property of the New England Telephone and Telegraph Company which had been made by them under the supervision of the commission. This inventory and appraisal was made under authority of chapter 102 of the Resolves of 1908. In the report accompanying the inventory the commission's engineers stated that a further study and investigation into the amount of traffic, costs of the same, accounting, etc., was desirable. The commission thereupon forwarded the inventory, with its recommendations, to His Excellency the Governor, Hon. Eben S. Draper. The commission's letter, together with the report of its engineers, was thereupon transmitted by the Governor to the Legislature, with a special message suggesting that a sum not exceeding \$35,000 be made available for a scientific investigation and report as to the cost of operation in different localities, and the amount necessary to be set aside for repairs, etc., in order that the commission might be enabled to determine what rates were fair and reasonable in the various localities of the State, and for the various classes of service, including toll and local. The money expended under authority of this statute was to be paid in the first instance from the treasury, but was to be repaid from time to time by the telephone company, as has been done in the case of the expense of making the inventory and appraisal. The telephone company

had already agreed to pay the expenses of such an investigation if the Legislature approved of having it made.

In consequence of this special message the Legislature passed a resolve (chapter 78 of the Resolves of 1909) entitled, "A Resolve to provide for a study of the traffic and methods of accounting of the New England Telephone and Telegraph Company," and made available for that purpose a sum not exceeding \$35,000.

It was manifest that the inventory and appraisal alone did not furnish sufficient information to enable the commission to make a just determination as to what the rate should be in any given locality or for any particular class of service.

The appraisal showed the property of the New England Telephone and Telegraph Company, with the details summarized. It also showed the value of the property belonging to the telephone company within the Commonwealth of Massachusetts, which value was shown to be \$34,133,270.

At the request of the company, an inventory and appraisal were made of the property owned by the telephone company outside the Commonwealth of Massachusetts, but which was represented by its capital stock.

The value put upon this property was \$12,407,549, making the entire value of the property of the New England Telephone and Telegraph Company \$46,540,819.

The total par value of the company's outstanding stocks, bonds and notes, as given by the company's auditor for Aug. 31, 1908, was \$38,939,850.

These figures, of course, are a summary of the inventory of the property, but the inventory itself was made in the minutest detail, showing each kind of property and all collateral materials in every locality in the Commonwealth.

The value of material and apparatus, poles, fittings, cross-arms, pins and hardware set in place, etc., was collected in detail and tabulated. The relative value of the plant was divided as nearly as possible between the plant used in local service and the plant used in toll service. Where poles, buildings, etc., were used for both services the value was prorated.

The appraisal showed that the total value of the physical plant used for local service in the Commonwealth was \$22,885,082.

The total value of the local plant in metropolitan Boston was \$4,463,843.

The total value of the local plant in the suburban district surrounding the metropolitan part of Boston was \$6,446,838. The total value of the local plant in the 11 cities of the Commonwealth outside of Boston of 50,000 inhabitants or over was \$6,872,411, and the remainder of the local plant required for service in the smaller cities and rural districts was valued at \$5,979,248.

The total value of the toll plant used in affording intercommunication between subscribers connected with different central offices was \$9,641,913. This is equivalent to 42 per cent. of the total local plant.

The report of Messrs. D. C. & Wm. B. Jackson giving these details and various others, including tables of values, will be found printed hereinafter as Appendix A.

Acting under the authority of the resolve of last year, the commission proceeded at once to have the investigation made. Its engineers have been engaged during the summer, with the hearty co-operation of the officials and accountants of the telephone company, in collecting and tabulating the various items showing the amount of traffic, cost of operation, maintenance, etc., that were necessary in order to enable the commission to determine what would be a fair and equitable rate, under all circumstances, in any given locality or for any class of service. It is manifest that such a study requires an intimate knowledge of an endless amount of detail and a careful tabulation of results before any conclusions can be drawn therefrom.

A study which was made of the earnings and expenses of the Bell Telephone Companies in the United States, not including the American Telephone and Telegraph Company, showed that for each of the 5,838,000,000 exchange connections made for the year ending Dec. 31, 1907, the amount of net earnings per connection was only \$0.0056, and the amount required for interest was \$0.0012 per exchange connection and for dividends \$0.0033, leaving substantially \$0.0011 as undivided profits. This statement is included merely to show how accurate the calculations and tabulations must be, and how carefully any rates must be considered before they are adopted, when such items

as dividends, net earnings, etc., are represented by a fraction of 1 cent per exchange connection.

A careful study has been made of the metropolitan and suburban districts. Careful counts have been kept of the number of calls, the character of each call and the nature of the service given. Tabulations are being made which will show the operating cost of each exchange connection, and, so far as possible, the cost when a call goes through one or more exchanges in order to reach a connection with the station which is called for.

Several tentative schedules of rates have been considered and checked up to see how they would work in actual practice and whether or not they would result in reasonable rates, fair not only to the public but to the telephone company. The commission hopes that very soon the telephone company and the experts employed by the commission will agree upon some schedule of rates which can be adopted for trial, at least, in the metropolitan and suburban districts, establishing fair and equitable rates for each class of service and for the subscribers in each locality embraced in any given district.

The commission hopes that, by the aid of the study that has been made and the collection of all this data for the metropolitan and suburban districts, the rates adopted therein will be based upon some fair and equitable principle that will be applicable to other localities in the Commonwealth where like conditions exist as to the territory served and the number of telephones within a given area, or in some other equitable manner.

It has been the purpose of the commission and its engineers to go into this subject most carefully and thoroughly before any plan was adopted, even tentatively, so that it might be sure it was obtaining as fair a rate as possible. It has also been the purpose of the commission to attempt to ascertain as nearly as possible what the cost of service has been for each particular class of subscriber, and to differentiate in those costs between toll and local, between business and residential, between single lines and party lines, coin boxes, etc., to the end that any rates established shall be just and equitable to all classes of subscribers, and that the rates adopted, while rendering a fair return on the investment to the telephone company's stockholders,

shall be reasonable and just also to all of its subscribers in each particular locality and for each particular class.

So far as the commission has been able to learn, the reduction in the toll rate from 10 cents to 5 cents between the 16 suburban exchanges and the metropolitan exchanges, which has been in force since April 15, 1908, has given satisfactory results, both to the company and to the subscribers.

The commission understands, also, that the company has carried out, as far as possible, the commission's recommendations to discontinue "all discriminating, irregular and preferential rates which gave special privileges to particular subscribers as distinguished from terms and rates open to any one in the same locality for service of the same character."

HAROLD PARKER,
WM. D. SOHIER,
F. D. KEMP,

Massachusetts Highway Commission.

APPENDIX A.

REPORT OF MESSRS. D. C. & WM. B. JACKSON.

BOSTON, MASS., March 27, 1909.

*The Honorable Massachusetts Highway Commission, 15 Ashburton Place,
Boston, Mass.*

GENTLEMEN:—We herewith give you a summary report of the results of the inventory and appraisal of the property of the New England Telephone and Telegraph Company that has been executed for you under our supervision.

You will find at the end of this report a table marked Exhibit 1, which shows the extent of the plant of the New England Telephone and Telegraph Company within the Commonwealth of Massachusetts, according to the actual count of the inventory made last mid-summer. This table shows the plant divided into different kinds of property, and gives the extent of each. The company has 247 exchange central offices, which provide telephone service for substantially every part of the Commonwealth. Of these central offices, 46 are housed in buildings owned by the company, while the company owns 7 other buildings in the Commonwealth which are used exclusively for storage or general purposes. The number of operators' positions at exchange switchboards, which aggregate 2,367, gives a truer idea of the extent of the telephone switchboards throughout the Commonwealth than is obtained from a consideration solely of the number of central offices.

This table represents a summary of the results of the inventory of the telephone company's property, and strikingly displays the magnitude and comprehensiveness of the system in this Commonwealth and the extent of each kind of plant, but the inventory dealt with a mass of details of which the table gives only a faint idea, and which are on file for use as may be needed in further studies of the telephone situation.

It will be seen from the table that the length of telephone conductors in the Massachusetts system is sufficient to provide nine complete metallic circuits of two wires each entirely around the

equatorial circumference of the earth, and still leave a little over, and that the other quantities found by the inventory are of correspondingly great magnitude.

In Exhibit 2, appended hereto, is given the total value of property of the New England Telephone and Telegraph Company relating to its business within the Commonwealth of Massachusetts, divided to correspond with the divisions of plant shown in Exhibit 1. In Exhibit 3 is given the value of the company's property relating to its business in the adjoining States.

The value given for each kind of property in Exhibit 2 includes the values of all the collateral materials that appropriately accompany the particular main division. For example: substation equipment includes all the cost (including installation labor) of the material and apparatus in the subscribers' stations installed ready for service; poles and fittings include all the cost of the poles suitably prepared with their cross-arms, pins and hardware, set in place ready to receive the insulators; aerial cables include the cost of the cables properly spliced, together with the messenger cables and hangers for carrying the conducting cables, the pole clamps, and the terminal boxes that are a part of the aerial cable distribution, all in place ready for service; and so on throughout the entire property.

Our appraisal shows that the total value of the physical plant used for local service in the Commonwealth of Massachusetts is \$22,885,082. This is the portion of the plant that is made use of to provide local service between subscribers whose circuits emanate from the same individual exchange central office, except that the 7 central offices of metropolitan Boston are considered as the equivalent of a single exchange central office.

The foregoing total for local plant is divided in the following manner between certain important divisions of the Commonwealth:—

The total value of local plant in metropolitan Boston is \$4,463,843.

The total value of local plant in the suburban district surrounding the metropolitan part of Boston is \$6,446,838.

Of the latter total, a value aggregating \$3,983,940 lies within the inner zone, now receiving 5-cent toll service with the metropolitan district; a value aggregating \$2,462,898 lies in the outer zone, now receiving 10-cent toll service with the metropolitan district.

The total value of local plant in the 11 cities of the Common-

wealth which, besides Boston, are of substantially 50,000 inhabitants or over, is \$6,872,411. These 11 cities are: Brockton, Cambridge, Fall River, Holyoke, Lawrence, Lowell, Lynn, New Bedford, Somerville, Springfield and Worcester.

The remainder of the local plant in the Commonwealth is required for service in the smaller cities and rural districts, and its value amounts to \$5,979,248.

In these divisions of local plant, the property in Cambridge and Somerville comes into the total for the suburban district and also into the total for the 11 cities.

The total value of the toll plant for use in affording intercommunication between subscribers connected with different central offices is \$9,641,913. It will be observed that this is a sum equal to 42 per cent. of the total local plant.

The average net current assets and cash on hand which enter into the capital of the telephone company amount to \$1,560,000, as obtained from figures supplied to us by the auditor of the company. This amount represents the funds that are required in the current operations of the company, and is added to the values of physical plant in Exhibit 2.

There are (as of the period of the inventory, namely, midsummer, 1908) 42,749 telephones in use in metropolitan Boston; 34,888 in use in the inner zone of the suburban district; 19,456 in use in the outer zone of the suburban district; 56,729 in use in the 11 aforesaid cities, and 54,540 in use in the remainder of the State. These may be distributed in a different classification, as follows: 20,201 main telephones, 17,143 private branch exchange terminal telephones and 5,405 extension telephones connecting with 19,159 subscribers' circuits in the metropolitan district; 29,672 main telephones, 2,519 private branch exchange terminal telephones and 2,697 extension telephones connecting with 16,556 subscribers' circuits in the inner zone of the suburban district; 16,875 main telephones, 702 private branch exchange terminal telephones and 1,879 extension telephones connecting with 8,770 subscribers' circuits in the outer zone of the suburban district; 45,516 main telephones, 5,113 private branch exchange terminal telephones and 6,100 extension telephones connecting with 23,581 subscribers' circuits in the 11 cities; and 48,558 main telephones, 1,892 private branch exchange terminal telephones and 4,090 extension telephones connecting with 19,399 subscribers' circuits in the remainder of the Commonwealth.

We here use the term main telephone to represent any telephones

except extension telephones and private branch exchange terminal telephones. The ratio between the number of main telephones and the number of subscribers' circuits shows the average number of main telephones per subscriber's circuit, or, as it is usually thought of, the average number of subscribers per circuit. The inventory shows in detail the number of each kind of circuit and each kind of telephone for each of the 241 sections of the State, comprising the metropolitan district of Boston and 240 central office exchange districts outside of the metropolitan district.

The data gathered are in great detail, and the figures here given are a summary of the whole. The inventory and appraisal which have been made with exceptional care show how much property the company possesses within Massachusetts and outside thereof, its distribution over the Commonwealth, its value and the distribution of the value throughout the Commonwealth. It shows that for each \$100 worth of property the company has outstanding \$83.67 of par value in stocks, bonds and notes. The aggregate value of the entire property of the company, and a comparison of this value with the total outstanding securities of the company, are shown in exhibits 4 and 5, hereto appended. From this relation of the appraised value of the property to the par value of the company's securities we infer that the company has been in the habit of paying for such expenses as engineering, interest, and like expenses pertaining to new construction, out of earnings instead of out of the capital account. The appraisal shows beyond dissent that the company now has no water in its securities, and the discrepancy in the other direction, constituting 16.3 per cent. of the total value of the property, is still small enough to cause no concern. Whether the company's existing method of putting the cost of new construction on its books should be continued is a matter which your honorable body may wish to consider. To give this a full consideration we believe that suitable accountants should be associated with your engineers.

The appraisal affords information on which your honorable body can decide how much money the company should be allowed as return on its investment, and how much it should be reasonably expected to expend on the average per year for reconstruction for the purpose of maintaining the plant against the ravages of age or the obsolescence incident to inventions and other causes for improvements and changes in the art. Whether the return on investment is ultimately to be figured on the outstanding stocks and bonds of the company or on the value of the plant, the sum

that must be allowed for reconstruction is unquestionably determined by the actual existing values of the different kinds of property composing the plant, which values are shown by the appraisal.

This reconstruction is called for on account of several factors. The rotting of poles so that they must be replaced, the deterioration of conduits, cables and wires so that they must be replaced, and the other effects of the elements and of use on every part of the plant ultimately bring nearly all parts of the telephone plant to a point where their further use is impracticable without rebuilding, however well cared for and carefully kept up by current repairs they may be. The part of the plant affected must then be bodily replaced. The advances occurring through improvements in the art also make an important factor in the telephone business, which demands the remodeling or the bodily replacing of parts of the plant from time to time before their natural life is run. A third factor is introduced by the action of municipal and other public boards, which may order improvements of streets and roads, as by ordering good pole lines removed to alleys or wires placed underground. None of these factors can be cared for out of a uniform appropriation such as may cover ordinary repairs; and the cost of making good after special attacks of the elements, such as damage of pole lines from sleet storms, the effects of forest fires, etc., is still more capricious in its occurrence. Nevertheless, these expenditures must be made out of current receipts year by year or the capital of the company is bound to become impaired. For this purpose the average rate of reconstruction likely to be required over an extended period of years must be figured on the basis of experience, and a corresponding sum of money should be set aside each year, to be expended in reconstruction of operating plant as the conditions require it. Less than this amount may be used in some years and more in other years, but the amount to be taken from the gross receipts each year for this purpose should be fixed upon an average determined by the extent and value of each kind of plant in the complete system. As a result of our study of the complete plant, we have applied percentages to each kind of construction involved, giving consideration to first cost, rate of depreciation, probable effects of rate of changes in the art and the acts of municipal bodies, special misfortunes caused by the elements, and also giving consideration to any salvage that might be recovered from discarded plant. The consideration of these various factors is based on experience in telephony and electric lighting of the past and as much judgment of the future as

may be brought to bear. In this way we arrive at a figure for the average yearly reconstruction account for the property used in Massachusetts business, which is equal to 7.3 per cent. of the value of such property, exclusive of land, general supplies and working capital (net current assets and cash on hand). This makes a sum to be thus annually taken for reconstruction purposes in Massachusetts which amounts to \$2,240,000 on the existing plant. A detailed table will accompany our full report.

From the company's expenditures for current repairs and reconstruction for the whole of its system, including the plant in the adjoining States, as reported to us by the company's auditor for several years past, we are led to conclude that the company is not making charges to reconstruction at a higher rate than our estimate; and it therefore seems proved that the company is not building extensions out of annual receipts under color of the reconstruction account, and our exacting inspection of the plant leads us to say that the company is maintaining it in excellent condition.

The knowledge gained by the appraisal, added to the company's records of annual operating and repair costs, puts your honorable body in possession of standards by which to measure the reasonableness of the total sum annually collected by the company from its subscribers. This was a principal aim of the appraisal of the property and has been accomplished.

At your request we have been recently studying the company's rate schedules along with the appraisal data, and we believe that improved schedules can soon be reported to you for the Boston and suburban district. The appraisal seems to us to indicate that the rates in the metropolitan district of Boston may be examined and revised with advantage to the subscribers and without injury to the company's stability. Rates for service in the metropolitan district, however, are closely associated with suburban rates, and changes in one set cannot be safely made without a full consideration of the effect on the other.

As pointed out in our report to you of March 10, 1908, traffic data must be gathered and properly apportioned, and operating and repair cost records made before it is possible to get a comprehensive, or, in fact, a reasonably satisfactory opinion of the soundness with which the total sum annually collected by the company is apportioned amongst the various localities and kinds of communities in the Commonwealth. The company has gathered traffic data since our preceding report, especially with respect to the

Boston and suburban district, which will be of service, but we believe that fuller traffic data and apportioned cost records must be gathered and studied with extended care before recommendations in regard to this very important point (the company's relative treatment of localities and classes of customers) can be put on a firmer foundation than the foundation which has apparently been heretofore utilized, namely, business expediency and the best personal judgment of the company's officers.

The large and growing business of the company shows that the judgment used by the company in the past has worked well; but study of the service, traffic and rates shows undeniable eccentricities in the company's existing development. We believe that our progress thus far shows that careful and full study of traffic rates and costs will bring the desired end of a more satisfactory means of comparing the company's treatment of different localities in the Commonwealth.

The great importance of a full and comprehensive telephone service, and the large part which the telephone plays in the business welfare and social convenience of the Commonwealth, make us believe that the expenditure for a full study of traffic, rates and costs should be made. The company ought to co-operate in such work by adding the judgment of its best experts, but we believe that your honorable body ought to receive your advice through suitable engineers and accountants who are independent of the company.

As aforesaid, in our opinion, suitable accountants may wisely be associated with your engineers, and an early part of their joint duty should be to plan, in co-operation with the company, means of record keeping that will afford data for more effectually determining, from time to time, the effect of any changes of rates or subscribers' privileges which may be made. We look upon this as of primary importance. The company's records do not seem now to be sufficiently refined for the purpose. For instance, the company's present records do not seem to be capable of affording as full an exhibit as seems to us desirable for your information of the effects on the company's investments, gross earnings and the cost of caring for the traffic, which have resulted from the change in the rate of tolls in a portion of the Boston and suburban district which the company put in effect nearly a year ago at the recommendation of your honorable body.

Additional complexity is imported into the rate question by the relations of the toll service to the local service. In order that local

rates may be reasonably adjusted, it is desirable that they shall not be entangled with the cost of the long-distance (toll) service of the company, and the valuation of the toll plant should, therefore, be separated from the valuation of the local plant as far as practicable. This is equally necessary for a satisfactory consideration of toll rates. This principle, as indicated by the figures given earlier, has been carried out in our appraisal. The long-distance toll system probably might be expected to earn its own operating expenses, reconstruction charges and return on the investment, independently of the receipts for local service, but we are not convinced that it is now doing so. In fact, figures for gross receipts seem to indicate the contrary. In case it is not doing so, it manifestly must be carried by the subscribers in general or by some particular classes of the subscribers. This needs further study of past records of traffic, receipts and expenditures, and also study more particularly based on additional records of traffic, gross receipts and expenditures kept with a fuller separation of the records for toll service from the records of local service. Such separation has been quite incomplete in the past.

In the inventory and appraisal, wires used for toll purposes are separated from those used for local service, and the supports or conduits are apportioned to toll and local plant in proportion to the actual toll and local wires carried. The values of central office equipment and land and buildings owned by the company are also apportioned between local service and toll service on actual service requirements.

In the outlying portions of the Commonwealth the difference between what may be appropriately considered toll plant and what may be considered local plant is clearly marked, as each exchange central office provides local service to a more or less distinct community, but in the Boston and suburban district the apportionment of plant between toll and local service is much more difficult.

Owing to the closely inter-related character of the sections of metropolitan Boston, which include the central offices called Back Bay, Fort Hill, Haymarket, Main, Oxford, Richmond and Tremont, we have considered the connecting circuits between these 7 central offices as a part of local plant. We have thus considered these 7 central offices, tied together as they are by connecting trunks, as the equivalent of a single exchange central office. In the suburban district, however, we have considered as toll circuits all circuits which pass from any suburban exchange to any other exchange, following our practice in inventorying the plant in the remainder of

the Commonwealth. We believe that this is a reasonable and fair way to make the assignments. Our inventory and appraisal also show the extent and value of all circuits connecting between central offices separately from the circuits extending from subscribers to central offices, so that the appraisal gives data for correcting the apportionment in case further study should indicate a desirability of changing this part of it.

The inventory and appraisal show the distribution of the property of the company through the Commonwealth, and they also show this distribution separated, as between local plant and toll plant, thus laying the foundation for a study of local rates and of toll rates separately in each part of the State.

The only means of obtaining this separation was an inventory and appraisal, and we believe that the apportionment is satisfactory as made.

The data obtained from the inventory and appraisal do not, however, include information about the company's expenditures for operating and repairs; and these ought to be carefully studied and means devised for maintaining records which will be of an analytical character, and will lend themselves to apportionment between the local and toll service. Plans should also be developed to maintain the plant valuation on a basis of appropriate continuous records.

To carry out the additional work to which we have referred, and which we believe ought to be carried out for the purpose of putting the Highway Commission in possession of adequate grounds for recommendation of rates as required by law, an additional appropriation will be needed. The appropriation now being used was made according to an estimate of the expense attendant upon planning and supervising the inventory and appraisal. It will be substantially exhausted by that work, though we expect to have some additional results in the way of proposing an improved rate schedule for the metropolitan district to accompany or precede our final report.

Of the money expended under the appropriation for planning and supervising the inventory and appraisal of the property of the New England Telephone and Telegraph Company, \$9,600 has so far been paid to D. C. & Wm B. Jackson as professional fees. The remainder expended out of the appropriation has been used to defray the expense accompanying the making of plans, the checking of inventory figures, and reducing the data to form convenient for a report to your honorable body, and such further use as you

may desire. The aforesaid expense has been largely made up of salaries and wages of inspectors, draftsmen, checkmen, etc.

We have not yet placed in your hands the great mass of maps and figures that comprise the inventory and appraisal of the plant, as we have recently had a force engaged, in accordance with your directions, in gathering statistics and other data relating to the matter of rates, and we have consequently delayed placing in your hands the completed report until the Boston and suburban rate question is ready for your consideration.

To execute your wishes as expressed to us will require carrying out in full the various branches of investigation set forth in the foregoing. We estimate that the additional sum which should be available for expenditure by your honorable body in order that these requirements shall be met is \$35,000. This ought to cover the cost of engineering and accountants' work as outlined. We believe that provisions may be made with wisdom to extend the work over not less than one year, with the expectation of utilizing its results in the readjustment of rates from time to time as the data may warrant. We make our estimate of the expense of the work on the basis of first arranging for adequate traffic and cost data, to be followed by careful study, continuing for a satisfactory extended period, so that the traffic and cost records may be sufficient to draw reasonably reliable conclusions. It is also desirable that the effect of any changes proposed for the rates of the Boston and suburban district should be carefully studied jointly by the engineers of the company and the commission before being put into force, and thereafter as to their effect on traffic and earnings.

Respectfully submitted,

DUGALD C. JACKSON.

EXHIBIT 1.—INVENTORY OF PROPERTY OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Table showing the Extent of the Plant in the Commonwealth of Massachusetts.

Number of buildings owned by company,	. . . . .	53
Parcels of land owned by company,	. . . . .	54
Number of exchange central offices,	. . . . .	247
Number of operators' positions at exchange switchboards,	. . . . .	2,367
Length of pole lines (approximate) miles,	. . . . .	7,754
Length of underground conduits, feet,	. . . . .	3,100,901
Length of underground conduits, miles,	. . . . .	587
These comprise underground ducts, feet,	. . . . .	14,370,649
These comprise underground ducts, miles,	. . . . .	2,721
Number of manholes in underground conduits,	. . . . .	11,217
Aggregate length of pole lines and conduits, miles,	. . . . .	8,341
Length of open wire on pole lines, miles,	. . . . .	67,599
Length of aerial cable, feet,	. . . . .	5,264,160
Length of aerial cable, miles,	. . . . .	997
Length of conductors in aerial cables, miles,	. . . . .	66,836
Total length of overhead conductors, miles,	. . . . .	134,435
Length of underground cables, feet,	. . . . .	6,663,360
Length of underground cables, miles,	. . . . .	1,262
Length of submarine cables, feet,	. . . . .	52,400
Length of submarine cables, miles,	. . . . .	10
Length of conductors in underground and submarine cables, miles,	. . . . .	318,225
Aggregate length of aerial, underground and submarine cables, miles,	. . . . .	2,269
Aggregate length of telephone conductors in all cables and wires, miles,	. . . . .	452,660
Number of poles,	. . . . .	310,138
Number of subscribers' telephones on Aug. 31, 1908,	. . . . .	199,382

EXHIBIT 2.—APPRaisal OF PROPERTY OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Table showing Value of Property belonging to Business within the Commonwealth of Massachusetts.

Substation equipment,	. . . . .	\$3,217,240
Drop wires leading to subscribers' premises,	. . . . .	668,315
Poles and fittings,	. . . . .	4,260,173
Conduits and manholes,	. . . . .	7,588,632
Wires on poles,	. . . . .	2,724,017
Aerial cables,	. . . . .	1,465,213
Underground and submarine cables,	. . . . .	4,718,066
Switchboards,	. . . . .	4,094,067
Furniture and tools,	. . . . .	453,078
Land and buildings,	. . . . .	2,344,469
General supplies, ¹	. . . . .	1,040,000
Net current assets and cash on hand, ²	. . . . .	1,560,000
<hr/>		
Total,	. . . . .	\$34,133,270

EXHIBIT 3.—APPRaisal OF PROPERTY OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Table showing Value of Property belonging to Business in Commonwealths outside of the Commonwealth of Massachusetts.

Apparatus and equipment,	. . . . .	\$9,771,766
Land and buildings,	. . . . .	210,783
Investment in other companies, ³	. . . . .	1,945,000
Net current assets and cash on hand, ²	. . . . .	480,000
<hr/>		
Total,	. . . . .	\$12,407,549

¹ Book value, from auditor.

² Round figure representing average condition.

³ At cost value, from auditor.

EXHIBIT 4.—APPRaisal OF PROPERTY OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Table showing the Division of Property Value between that belonging to Business within the Commonwealth of Massachusetts and that belonging to Business in Adjoining States, together with the Total Value of Property.

Value of property belonging to business within the Commonwealth of Massachusetts,	\$34,133,270
Value of property belonging to business in Commonwealths adjoining Massachusetts,	12,407,549
Value of entire property of the New England Telephone and Telegraph Company,	\$46,540,819

EXHIBIT 5.—APPRaisal OF PROPERTY OF THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Table showing Value of the Property compared with the Outstanding Securities of the Telephone Company.

Appraisal value of entire property of the New England Telephone and Telegraph Company,	\$46,540,819
Total par value of the company's outstanding stocks, bonds and notes, as given by the company's auditor, for Aug. 31, 1908,	\$38,939,850

APPENDIX B.

ABSTRACTS OF ANNUAL RETURNS FOR THE YEAR ENDING JUNE 30, 1909, OF COMPANIES ENGAGED IN THE TRANSMISSION OF INTELLIGENCE BY ELECTRICITY IN MASSACHUSETTS.

LARGE TELEPHONE COMPANIES.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

Location of principal business office: 15 Dey Street, New York, N. Y.

Date of organization: March, 1885.

Date of incorporation: March, 1885.

State in which incorporated: New York.

Date of annual meeting: last Tuesday of March.

Date when company began to give service: 1885.

GENERAL OFFICERS AND OFFICIAL TITLES.

Theodore N. Vail,	.	.	.	.	.	.	<i>President.</i>
William R. Driver,	.	.	.	.	.	.	<i>Vice-President.</i>
Edward J. Hall,	.	.	.	.	.	.	<i>Vice-President.</i>
Bernard E. Sunny,	.	.	.	.	.	.	<i>Vice-President.</i>
Harry B. Thayer,	.	.	.	.	.	.	<i>Vice-President.</i>
Charles P. Ware,	.	.	.	.	.	.	<i>Vice-President.</i>
Charles E. Hubbard,	.	.	.	.	.	.	<i>Secretary.</i>
William R. Driver,	.	.	.	.	.	.	<i>Treasurer.</i>
Charles G. Du Bois,	.	.	.	.	.	.	<i>Comptroller.</i>

DIRECTORS AND RESIDENCES.

Charles W. Amory,	.	.	.	.	.	.	Boston, Mass.
Thomas B. Bailey,	.	.	.	.	.	.	Boston, Mass.
George F. Baker,	.	.	.	.	.	.	New York, N. Y.
Francis Blake,	.	.	.	.	.	.	Auburndale, Mass.
Alexander Cochrane,	.	.	.	.	.	.	Boston, Mass.
T. Jefferson Coolidge, Jr.,	.	.	.	.	.	.	Manchester, Mass.
W. Murray Crane,	.	.	.	.	.	.	Dalton, Mass.
Rudolph Ellis,	.	.	.	.	.	.	Philadelphia, Pa.
George L. Green,	.	.	.	.	.	.	New York, N. Y.
Henry S. Howe,	.	.	.	.	.	.	Brookline, Mass.
Charles E. Hubbard,	.	.	.	.	.	.	Cambridge, Mass.
William L. Putnam,	.	.	.	.	.	.	Manchester, Mass.
Thomas Sanders,	.	.	.	.	.	.	Haverhill, Mass.
Sylvanus L. Schoonmaker,	.	.	.	.	.	.	New York, N. Y.
Nathaniel Thayer,	.	.	.	.	.	.	Lancaster, Mass.
Theodore N. Vail,	.	.	.	.	.	.	Lyndonville, Vt.
John I. Waterbury,	.	.	.	.	.	.	Morristown, N. J.
Moses Williams,	.	.	.	.	.	.	Brookline, Mass.

CAPITAL.

Capital authorized by charter,	\$300,000,000 00
Capital authorized by vote of company,	237,788,100 00
Capital paid in, 2,377,881 shares; par value, \$100,	237,788,100 00

Whole number of stockholders,	29,623
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DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
July 1, 1899,	July 1, 1929,	Stocks and bonds deposited as collateral,	4	\$53,000,000 00
March 1, 1906,	March 1, 1936,	Not secured,	4	73,170,000 00
July 1, 1898,	July 1, 1908,	Not secured (guaranteed bonds),	4	6,000 00
Jan. 1, 1907,	Jan. 1, 1910,	Not secured,	5	25,000,000 00
May 1, 1904,	May 1, 1907,	Not secured,	5	6,000 00
Total amount of bonds and notes,				
\$151,182,000 00				
Capital paid in,				
\$237,788,100 00				
Total liability for capital and loans,				
\$388,970,100 00				

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM).

	Items.	Totals.
Gross earnings from operation, ¹	. . . . .	\$15,025,518 88
General expense,	\$1,949,845 92	
Operating expense,	2,180,733 30	
Maintenance,	3,167,476 73	
Other expenses,	198,452 66	
Total expenses,	<u>7,496,508 61</u>	
Net revenue from operation,		\$7,529,010 27
Miscellaneous income:—		
Real estate revenue,	\$154,267 68	
Income from securities,	18,836,314 42	
Other miscellaneous income,	694,075 05	
Total miscellaneous income,	<u>19,684,657 15</u>	
Total income above expenses,		\$27,213,667 42
Fixed charges:—		
Interest on funded debt,	\$6,534,817 35	
Interest on floating debt,	1,259,437 01	
Total fixed charges,	<u>7,794,254 36</u>	
Net divisible income,		\$19,419,413 06
Dividends declared, 8 per cent. on varying amounts,		13,970,355 75
Surplus for year ending June 30, 1909,		\$5,449,057 31

¹ Gross earnings in Massachusetts, \$9,055.

EARNINGS (WHOLE SYSTEM).

Gross earnings from operation :—

	Items.	Totals.
Exchange service :—		
Subscribers' rentals,		\$9,383 00
Toll service:—		
Toll service,	\$7,174,475 65	
Leased line rentals,	2,151,968 30	
Miscellaneous toll earnings,	12,031 01	
Total toll service,		9,338,474 96
Conduit, pole and roof rent,		134,439 48
Licensee companies,		5,543,221 44
Revenue from operation,		\$15,025,518 88
Miscellaneous income:—		
Real estate revenue,	\$154,267 68	
Dividends on stocks of other companies,	13,861,639 18	
Interest on bonds and notes of other companies,	4,974,675 24	
Other miscellaneous income,	694,075 05	
Total miscellaneous income,		19,684,657 15
Total gross earnings and income,		\$34,710,176 03

EXPENSES (WHOLE SYSTEM).

EXPENSES (WIRELESS SYSTEM).	
General expense,	\$1,949,845 92
Operating expense,	2,180,733 30
Maintenance expense,	3,167,476 73
Conduit, pole and roof rent,	198,452 66
 Total of all expenses.	 \$7,496,508 61

GENERAL BALANCE SHEET.

Assets.

Assets.							
Exchange construction and equipment,	.	.	.	.	.	\$91,678	70
Toll construction,	.	.	.	.	.	40,818,628	93
Construction in process,	.	.	.	.	.	962,889	59
Other real estate required for operation,	.	.	.	.	.	2,543,110	47
Office furniture and fixtures,	.	.	.	.	.	225,945	79
Tools and teams,	.	.	.	.	.	75,730	65
<hr/>							
Total plant account,	.	.	.	.	.	\$44,717,984	13
Telephones,	.	.	.	.	.	9,994,987	72
Securities of other companies,	.	.	.	.	.	244,235,460	02
Current assets:—							
Cash on hand,	.	.	.	.	.	\$21,249,954	69
Notes and accounts receivable,	.	.	.	.	.	115,149,957	54
Supplies on hand,	.	.	.	.	.	772,998	25
Total current assets,	.	.	.	.	.	<hr/>137,172,910	48
Treasury stock,	.	.	.	.	.	19,878,200	00
<hr/>							
Total debits,	.	.	.	.	.	\$455,999,542	35

<i>Liabilities.</i>	Items.	Totals.
Capital stock, . . . . .	. . . . .	\$237,788,100 00
Bonded debt, . . . . .	. . . . .	126,176,000 00
Current liabilities:—		
Loans and notes payable,	\$25,006,000 00	
Audited vouchers and accounts,	457,748 38	
Dividends not called for (including dividend payable July 15, \$4,443,897.35),	4,448,517 35	
Matured interest coupons unpaid (including due July 1, 1909, \$1,685,000),	1,731,270 00	
Total current liabilities,	—————	31,643,535 73
Accrued liabilities:—		
Interest accrued but not due,	\$975,600 00	
Taxes accrued but not due,	91,788 93	
Miscellaneous accrued liabilities,	986,557 56	
Total accrued liabilities,	—————	2,053,946 49
Sinking and other special funds:—		
Depreciation reserve, . . . . .	. . . . .	21,210,290 02
Total liabilities, . . . . .	. . . . .	\$418,871,872 24
Balance, surplus, . . . . .	. . . . .	37,127,670 11
Total credits, . . . . .	. . . . .	\$455,999,542 35

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).

Additions.

Exchange construction and equipment, . . . . .	. . . . .	\$6,074 37
Toll construction, . . . . .	. . . . .	521,125 87
Additions to other permanent property, . . . . .	. . . . .	301,676 44
Total additions, . . . . .	. . . . .	————— \$828,876 68

Deductions.

Construction abandoned, . . . . .	. . . . .	\$48,576 74
Sale of real estate, . . . . .	. . . . .	1,377,673 96
Total deductions, . . . . .	. . . . .	————— \$1,426,250 70
Net credit to property account for the year, . . . . .	. . . . .	\$597,374 02

STATISTICAL INFORMATION (OVERHEAD, UNDERGROUND AND SUBMARINE SYSTEM IN MASSACHUSETTS).

Underground system:—

Conduit, feet, . . . . .	. . . . .	109,148
Duct, feet, . . . . .	. . . . .	694,450
Cable, feet, . . . . .	. . . . .	227,604
Wire, feet, . . . . .	. . . . .	36,919,986

Submarine system:—

Cable, feet, . . . . .	. . . . .	4,152
Wire, feet, . . . . .	. . . . .	113,886

Overhead system:—

Pole line, miles, . . . . .	. . . . .	513.20
Iron wire, miles, . . . . .	. . . . .	205.31
Copper wire, miles, . . . . .	. . . . .	15,887.77

GENERAL REMARKS AND EXPLANATIONS.

"No exchange service given by this company in the State of Massachusetts; its business in said State consists of the furnishing of lines and facilities to enable the transmission of intelligence, through the exchanges of other telephone companies, between the subscribers and patrons of one of such companies and those of another. The traffic carried on over its lines is almost entirely interstate."

AUTOMATIC TELEPHONE COMPANY OF NEW BEDFORD.

Location of principal business office: 43 William Street, New Bedford, Mass.

Date of organization: Nov. 12, 1898.

Date of incorporation: Nov. 28, 1898.

State in which incorporated: Massachusetts.

Date of annual meeting: second Wednesday in April.

Date when company began to give service: Dec. 1, 1900.

Service is given by this company over its own lines in the city of New Bedford.

GENERAL OFFICERS AND OFFICIAL TITLES.

Francis T. Akin,	<i>President.</i>
Lot B. Bates,	<i>Vice-President.</i>
Frederic Taber,	<i>Treasurer.</i>
Clarence H. James,	<i>Assistant Treasurer.</i>
Frederick H. Taber,	<i>Clerk.</i>
William R. Binkley,	<i>Superintendent.</i>

DIRECTORS AND RESIDENCES.

Francis T. Akin,	New Bedford, Mass.
Lot B. Bates,	New Bedford, Mass.
Frederic Taber,	New Bedford, Mass.
Frederick H. Taber,	New Bedford, Mass.
Edward D. Sherman,	New Bedford, Mass.
Frederick W. Besse,	New Bedford, Mass.
Thomas Hersom,	New Bedford, Mass.
William C. Hawes,	New Bedford, Mass.

CAPITAL.

Capital authorized by charter,	\$100,000 00
Capital authorized by vote of company,	200,000 00
Capital paid in, 4,000 shares; par value, \$50,	200,000 00
Whole number of stockholders,	170
Number of stockholders resident in Massachusetts,	163
Amount of stock held in Massachusetts (shares),	3,837

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
Jan. 6, 1909,	July 6, 1909,	Company's note,	4½	\$10,000 00
Jan. 12, 1909,	July 12, 1909,	Company's note,	4½	6,000 00
Jan. 13, 1909,	July 13, 1909,	Company's note,	4½	5,000 00
Feb. 6, 1909,	Aug. 6, 1909,	Company's note,	4½	9,000 00
Total amount of notes,				
Capital paid in,				
Total liability for capital and loans,				

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	\$29,854 26	
Less rebates and discounts,	1,408 52	
Revenue from operation,		\$28,445 74
General expense,	\$4,609 38	
Operating expense,	5,604 01	
Current repair,	4,717 87	
Other expenses,	235 52	
Total expenses,		15,166 78
Net revenue from operation,		\$13,278 96
Real estate revenue,		107 46
Total income above expense,		\$13,386 42
Fixed charges :—		
Interest on floating debt,		2,311 39
Net divisible income,		\$11,075 03
Dividends :—		
Dividends declared on preferred stock,	\$4,901 50	
Dividends declared on common stock,	6,250 00	
		11,151 50
Deficit for year ending June 30, 1909,		\$76 47

EARNINGS.

Gross earnings from operation :—	
Exchange service:—	
Subscribers' rentals,	\$29,131 74
Toll service,	722 52
Total gross earnings from operation,	\$29,854 26
Less rebates and discounts,	1,408 52
Revenue from operation,	\$28,445 74
Miscellaneous income :—	
Real estate revenue,	107 46
Total gross earnings and income,	\$28,553 20

EXPENSES.

	Items.	Totals.
General expense:—		
Salaries of officers,	\$1,200 00	
Salaries of others,	75 00	
Wages of clerks,	198 00	
Rent, light and heat,	48 05	
Travelling,	17 50	
Postage, printing and stationery,	293 74	
Directory,	104 40	
Taxes,	1,682 92	
Legal,	65 00	
Insurance,	405 37	
Incidental,	519 40	
Total general expense,	<hr/>	\$4,609 38
Operating:—		
Superintendence,	\$520 47	
Wages of operators,	364 00	
Wages of others,	910 00	
Rent, light, heat and power,	670 65	
Postage, printing and stationery,	37 45	
Advertising, canvassing and collecting,	2,565 76	
Incidental,	535 68	
Total operating expense,	<hr/>	5,604 01
Current repair:—		
Exchange overhead lines,	\$2,454 93	
Exchange underground lines,	189 40	
Central office equipment,	1,055 73	
Subscribers' equipment,	1,017 81	
Total maintenance expense,	<hr/>	4,717 87
Conduit, pole and roof rent,	78 73	
Real estate expense,	<hr/>	156 79
Total of all operating expenses,	<hr/>	\$15,166 78

GENERAL BALANCE SHEET.

Assets.

Exchange construction:—		
Overhead lines,	\$70,709 97	
Underground lines,	63,995 46	
Central office equipment,	40,756 66	
Subscribers' station equipment,	41,507 15	
Total exchange construction and equipment,	<hr/>	\$216,969 24
Toll construction:—		
Overhead lines,	3,746 80	
Real estate required for operation,	<hr/>	13,000 00
Total plant account,	<hr/>	\$233,716 04
Contract and licenses,	20,000 00	
Current assets:—		
Cash on hand,	\$1,643 15	
Notes and accounts receivable,	7,866 97	
Total current assets,	<hr/>	9,510 12
Total debits,	<hr/>	\$263,226 16

<i>Liabilities.</i>	Items.	Totals.
Capital stock, common,	\$100,000 00	
Capital stock, preferred,	100,000 00	
Total capital stock,	<u> </u>	\$200,000 00
Current liabilities:—		
Loans and notes payable,	\$30,000 00	
Rentals due and unpaid,	5,420 00	
Total current liabilities,	<u> </u>	35,420 00
Sinking and other special funds:—		
Depreciation account,		5,000 00
Total liabilities,		\$240,420 00
Balance, surplus,		22,806 16
Total credits,		\$263,226 16
PROFIT AND LOSS ACCOUNT.		
Balance from previous year,		\$29,652 03
Directory,		32 40
Gross earnings from operation,		29,854 26
Real estate revenue,		107 46
Operating expenses,	\$15,166 78	
Rebates and discounts,	1,408 52	
Interest on floating debt,	2,311 39	
Dividends declared on stock,	11,151 50	
Commission underwriting new stock,	1,801 80	
License charged off,	5,000 00	
Balance, surplus,	22,806 16	
	<u> </u>	
	\$59,646 15	\$59,646 15

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).*Additions.*

Exchange construction:—	Items.	Totals.
Overhead lines,	\$8,421 85	
Underground lines,	181 99	
Total exchange construction,	<u> </u>	\$8,603 84

Deductions.

Charged off central office equipment,	\$1,359 48
Charged off subscribers' station equipment,	134 98
Total deductions,	<u> </u>
Net additions to property account for the year,	\$7,109 38

STATISTICAL INFORMATION.

Number of subscribers,	1,382
Number of instruments,	1,441
Number of operators,	1
Number of pay stations,	3
Number of subscribers on party lines,	211
Number of subscribers on single lines,	1,171
Underground system:—	
Conduit, feet,	18,480
Duct, feet,	135,120
Cable, feet,	58,080
Wire, feet,	9,715,200

Overhead system:—

Pole line, miles,	31
Iron wire, miles,	334
Copper wire, miles,	74
Copper wire in aerial cables, feet,	5,370,450

GENERAL REMARKS AND EXPLANATIONS.

"Profit and loss credit, amounting to \$32.40 was treated in last year's report as a liability, appearing in item 'Audited vouchers and accounts,' but on corporation books was entered correctly."

CAPE COD TELEPHONE COMPANY.

Location of principal business office: Hyannis, Mass.

Date of organization: Feb. 5, 1903.

Date of incorporation: Feb. 10, 1903.

State in which incorporated: Massachusetts.

Date of annual meeting: first week day in September.

Date when company began to give service: April 23, 1903.

Service is given by this company over its own lines in the town of Barnstable.

GENERAL OFFICERS AND OFFICIAL TITLES.

Frank Percy Goss,	<i>President.</i>
Alfred Willard Guyer,	<i>Vice-President.</i>
Arthur Gordon Guyer,	<i>Clerk and Treasurer.</i>

DIRECTORS AND RESIDENCES.

Frank Percy Goss,	Hyannis, Mass.
Alfred Willard Guyer,	Hanover, N. H.
Arthur Gordon Guyer,	Hyannis, Mass.

CAPITAL.

Capital authorized by charter,	\$1,000 00
Capital authorized by vote of company,	5,000 00
Capital paid in, 240 shares; par value, \$25,	6,000 00

Whole number of stockholders,	14
Number of stockholders resident in Massachusetts,	13
Amount of stock held in Massachusetts (shares),	239

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
Feb. 15, 1909,	Aug. 15, 1909,	Not secured,	5½	\$200 00
April 21, 1909,	Oct. 21, 1909,	Not secured,	6	300 00
June 5, 1909,	Dec. 5, 1909,	Not secured,	6	400 00
June 28, 1909,	Dec. 28, 1909,	Not secured,	6	200 00
Total amount of bonds and notes,				\$1,100 00
Capital paid in,				6,000 00
Total liability for capital and loans,				\$7,100 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	\$3,030 53	
Less rebates and discounts,	8 00	
 Revenue from operation,		\$3,022 53
General expense,	\$1,034 77	
Operating expense,	550 89	
Current repair,	456 13	
Total expenses,		2,041 79
 Net revenue from operation,		\$980 74
Fixed charges:—		
Interest on floating debt,		78 50
 Surplus of net income above fixed charges,		\$902 24
Dividends declared, 6 per cent. on \$6,000,		360 00
 Surplus for year ending June 30, 1909,		\$542 24
 EARNINGS.		
Exchange service:—		
Subscribers' rentals,		\$3,030 53
Less rebates and discounts,		8 00
 Total gross earnings and income,		\$3,022 53

EXPENSES.

General expense:—		
Salaries of officers,	\$750 00	
Rent, light and heat,	55 00	
Travelling,	50 00	
Postage, printing and stationery,	26 72	
Directory,	21 25	
Taxes,	106 22	
Incidental,	25 58	
Total general expense,		\$1,034 77
Operating:—		
Wages of operators,		550 89
Current repair:—		
Exchange overhead lines,		456 13
 Total of all operating expenses,		\$2,041 79

GENERAL BALANCE SHEET.

Assets.

Exchange construction:—		
Overhead lines,	\$5,600 00	
Central office equipment,	200 00	
Subscribers' station equipment,	1,800 00	
Total exchange construction and equipment,		\$7,600 00
Current assets:—		
Cash on hand,	\$34 61	
Supplies on hand,	100 00	
Total current assets,		134 61
 Total debits,		\$7,734 61

<i>Liabilities.</i>	Totals.
Capital stock, common,	\$6,000 00
Current liabilities: —	
Loans and notes payable,	1,100 00
Total liabilities,	\$7,100 00
Balance, surplus,	634 61
Total credits,	\$7,734 61

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$229 11	
Gross earnings from operation,	3,030 53	
Operating expenses,	\$2,041 79	
Rebates and discounts,	8 00	
Interest on floating debt,	78 50	
For depreciation :—		
Overhead lines,	136 74	
Dividends declared on stock,	360 00	
Balance, surplus,	634 61	
	<hr/>	<hr/>
	\$3,259 64	\$3,259 64

PROPERTY ACCOUNTS (ADDITIONS DURING THE YEAR).

Exchange construction: —

Overhead lines,	\$136 74
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STATISTICAL INFORMATION.

Number of subscribers,	241
Number of instruments,	245
Number of operators,	4
Number of pay stations,	2
Number of subscribers on party lines,	240
Number of subscribers on single lines,	1
Overhead system: —	
Pole line, miles,	35
Iron wire, miles,	216

DEERFIELD VALLEY TELEPHONE AND TELEGRAPH COMPANY.

Location of principal business office: 119 Milk Street, Boston, Mass.

Date of organization: April 14, 1906.

Date of incorporation: April 14, 1906.

State in which incorporated: Massachusetts.

Date of annual meeting: first Thursday in February.

Date when company began to give service: April, 1906.

Names of towns in Massachusetts in which service is given by the company over its own lines: —

Ashfield,	Colrain,	Monroe,
Buckland,	Conway,	Shelburne.
Charlemont,		

Service is also given by this company in the State of Vermont.

GENERAL OFFICERS AND OFFICIAL TITLES.

Jasper N. Keller,	.	.	.	.	.	.	President.
Fred. W. Story,	.	.	.	.	.	.	Vice-President.
Edmund S. Willard,	.	.	.	.	.	.	Treasurer.
Edmund W. Longley,	.	.	.	.	.	.	Auditor.
Edward A. Wilkie,	.	.	.	.	.	.	Clerk.
George M. Bemis,	.	.	.	.	.	.	General Manager.
Walter Kinsman,	.	.	.	.	.	.	Acting General Manager.

DIRECTORS AND RESIDENCES.

Hal T. Goodell,	.	.	.	.	.	.	Readsboro, Vt.
Frank K. Gould,	.	.	.	.	.	.	Monroe Bridge, Mass.
Francis A. Houston,	.	.	.	.	.	.	Concord, Mass.
Matt. B. Jones,	.	.	.	.	.	.	Newton, Mass.
Jasper N. Keller,	.	.	.	.	.	.	Surry, N. H.
Carl T. Keller,	.	.	.	.	.	.	Boston, Mass.
George W. Kentfield,	.	.	.	.	.	.	Wilmington, Vt.
Charles D. Noyes,	.	.	.	.	.	.	Colrain, Mass.
Fred. W. Story,	.	.	.	.	.	.	Laconia, N. H.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	.	\$15,000 00
Capital authorized by vote of company,	.	.	.	.	.	.	15,000 00
Capital paid in, 600 shares; par value, \$25,	.	.	.	.	.	.	15,000 00

Whole number of stockholders,	.	.	.	.	.	.	12
Number of stockholders resident in Massachusetts,	.	.	.	.	.	.	6
Amount of stock held in Massachusetts (shares),	.	.	.	.	.	.	11
Amount of stock held by the parent telephone company (shares),	.	.	.	.	.	.	584

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM):

	Items.	Totals.
Gross earnings from operation, ¹	.	\$5,110 28
Less rebates and discounts,	.	45 65
Revenue from operation,	.	\$5,064 63
General expense,	.	\$316 16
Operating expense,	.	2,840 36
Current repair,	.	1,287 24
Instrument rentals,	.	245 91
Other expenses,	.	138 98
Total expenses,	.	4,828 65
Net revenue from operation,	.	\$235 98
Profit on property sold,	.	2,810 52
Total income above expenses,	.	\$3,046 50
Fixed charges:—		
Interest on floating debt,	.	393 47
Surplus for year ending June 30, 1909,	.	\$2,653 03

¹ Gross earnings from operation in Massachusetts, \$2,877 34
Less rebates and discounts, 39 92

Revenue from operation in Massachusetts, \$2,837 42

EARNINGS (WHOLE SYSTEM).

Gross earnings from operation :—

	Items.	Totals.
Exchange service:—		
Subscribers' rentals,	\$3,748 16	
Pay station local tolls,	101 15	
Terminal charges on long-distance business,	206 52	
Total exchange service,	\$4,055 83	
Toll service,		1,054 45
Total gross earnings from operation,	\$5,110 28	
Less rebates and discounts,		45 65
Revenue from operation,	\$5,064 63	
Miscellaneous income :—		
Profit on property sold,		2,810 52
Total gross earnings and income,	\$7,875 15	

EXPENSES (WHOLE SYSTEM).

General expense:—

Directory,	\$13 65	
Taxes,	281 46	
Incidental,	21 05	
Total general expense,	\$316 16	
Operating:—		
Superintendence,	\$519 71	
Wages of operators,	1,324 94	
Wages of others,	428 00	
Rent, light and heat,	219 55	
Postage, printing and stationery,	109 24	
Advertising and canvassing,	12 00	
Incidental,	226 92	
Total operating expenses,	2,840 36	
Current repair,		1,287 24
Instrument rentals:—		
Exchange,	245 91	
Messenger expense,	41 74	
Conduit, pole and roof rent,	97 24	
Total of all operating expenses,	\$4,828 65	

GENERAL BALANCE SHEET.

Assets.

Current assets:—

Cash on hand,	\$317 27	
Notes and accounts receivable,	3,320 22	
Total debits,	\$3,637 49	

Liabilities.

Current liabilities:—

Audited vouchers and accounts,	\$186 03	
Balance, surplus,	3,451 46	
Total credits,	\$3,637 49	

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,		\$798 43
Gross earnings from operation,		5,110 28
Miscellaneous income,		2,810 52
Operating expenses,	\$4,828 65	
Rebates and discounts,	45 65	
Interest on floating debt,	393 47	
Balance, surplus,	3,451 46	
	<hr/>	<hr/>
	\$8,719 23	\$8,719 23

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).

Additions.	Items.	Totals.
Exchange construction,	\$66 80	
Central office equipment,	1 16	
Subscribers' station equipment,	210 09	
Total exchange construction and equipment,	<hr/>	\$278 05
Additions to other permanent property:—		
Tools and teams,	<hr/>	2 86
Total additions,	<hr/>	\$280 91
Deductions.		
Construction,	\$25,156 28	
Office furniture and fixtures,	11 45	
Tools and teams,	136 75	
Total deductions,	<hr/>	25,304 48
Net deductions from property account for the year,	<hr/>	\$25,023 57

GENERAL REMARKS AND EXPLANATIONS.

1. This company has not been operating since Jan. 1, 1909.
 2. Distribution of assets of the company to the amount of \$15,000 has been made, the same being partial distribution of assets in accordance with vote of stockholders Dec. 15, 1908.
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FALL RIVER AUTOMATIC TELEPHONE COMPANY.

Location of principal business office: 215 Bank Street, Fall River, Mass.

Date of organization: Dec. 7, 1899.

Date of incorporation: Dec. 8, 1899.

State in which incorporated: Massachusetts.

Date of annual meeting: second Monday of April.

Date when company began to give service: Oct. 1, 1901.

Service is given by this company over its own lines in Fall River and in the State of Rhode Island.¹

GENERAL OFFICERS AND OFFICIAL TITLES.

Edward B. Jennings,	<i>President.</i>
Bradford D. Davol,	<i>Treasurer.</i>
William R. Binkley,	<i>Superintendent.</i>
Clark Chase, Jr.,	<i>Manager and Assistant Treasurer.</i>

¹ Five instruments are located in the State of Rhode Island.

DIRECTORS AND RESIDENCES.

Edward B. Jennings,	Fall River, Mass.
Edmund W. Wakelee,	Englewood, N. J.
John T. Swift,	Fall River, Mass.
Joseph Watters,	Fall River, Mass.
Martin Feeney,	Fall River, Mass.
Bradford D. Davol,	Fall River, Mass.
Danforth H. Hathaway,	Fall River, Mass.

CAPITAL.

Capital authorized by charter,	\$135,000 00
Capital authorized by vote of company,	135,000 00
Capital paid in, 2,700 shares; par value, \$50,	135,000 00
Whole number of stockholders,	68
Number of stockholders resident in Massachusetts,	66
Amount of stock held in Massachusetts (shares),	1,924

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
June 1, 1903,	June 1, 1923,	Mortgage on land, buildings, licenses, franchise and property.	5	\$65,000 00
Total amount of bonds and notes,				\$65,000 00
Capital paid in,				135,000 00
Total liability for capital and loans,				\$200,000 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	\$29,417 85	
Less rebates and discounts,	545 96	
Revenue from operation,	—————	\$28,871 89
General expense,	\$8,549 81	
Operating expense,	2,690 80	
Current repair,	7,834 03	
Total expenses,	—————	19,074 64
Net revenue from operation,	\$9,797 25	
Miscellaneous income,	112 02	
Total income above expenses,	—————	\$9,909 27
Fixed charges:—		
Interest on funded debt,	\$3,250 00	
Interest on floating debt,	75 00	
Total fixed charges,	—————	3,325 00
Net divisible income,	\$6,584 27	
Dividends declared, 4 per cent. on \$135,000,	5,400 00	
Surplus for year ending June 30, 1909,	—————	\$1,184 27

EARNINGS.

	Items.	Totals.
Exchange service:—		
Subscribers' rentals,	\$28,439 77	
Pay station local tolls,	134 60	
Leased line rentals,	121 41	
Total exchange service,	<u> </u>	\$28,695 78
Toll service,		722 07
		<u> </u>
Total gross earnings from operation,		\$29,417 85
Less rebates and discounts,		545 96
		<u> </u>
Revenue from operation,		\$28,871 89
Miscellaneous income,		112 02
		<u> </u>
Total gross earnings and income,		\$28,983 91

EXPENSES.

General expense:—		
Salaries of officers,	\$2,999 88	
Salaries of others,	780 00	
Wages of clerks,	864 00	
Rent, light and heat,	439 40	
Travelling,	427 00	
Postage, printing and stationery,	364 25	
Directory,	194 70	
Taxes,	1,336 23	
Legal,	334 28	
Insurance,	358 32	
Incidental,	451 75	
Total general expense,	<u> </u>	\$8,549 81
Operating:—		
Wages of operators,	\$1,198 83	
Wages of others,	1,260 38	
Rent, light and heat,	231 59	
Total operating expense,	<u> </u>	2,690 80
Current repair:—		
Exchange overhead lines,	\$3,843 33	
Exchange underground lines,	38 05	
Central office equipment,	259 22	
Subscribers' equipment,	3,618 11	
Total overhead lines,	15 15	
Incidental,	60 17	
Total maintenance expense,	<u> </u>	7,834 03
Total of all operating expenses,		<u> </u>
		\$19,074 64

GENERAL BALANCE SHEET.

Assets.

Exchange construction:—		
Overhead lines,	\$59,268 84	
Underground lines,	72,352 87	
Central office equipment,	25,000 00	
Subscribers' station equipment,	59,277 52	
Total exchange construction and equipment,	<u> </u>	\$215,899 23
Amount carried forward,		<u> </u>
		\$215,899 23

	Items.	Totals.
<i>Amount brought forward,</i>		\$215,899 23
Toll construction: —		
Overhead lines,		3,746 80
Other real estate required for operation,		11,006 83
Tools and teams,		280 00
		<hr/>
Total plant account,		\$230,932 86
Contracts and licenses,		10,000 00
Current assets: —		
Cash on hand,		\$2,845 01
Notes and accounts receivable,		3,725 43
Unexpired insurance,		222 04
Total current assets,		6,792 48
		<hr/>
Total debits,		\$247,725 34
Liabilities.		
Capital stock, common		\$135,000 00
Bonded debt,		65,000 00
Current liabilities: —		
Audited vouchers and accounts,		\$984 47
Salaries and wages unpaid,		249 99
Total current liabilities,		1,234 46
Accrued liabilities: —		
Interest accrued but not due,		\$270 83
Taxes accrued but not due,		930 45
Total accrued liabilities,		1,201 28
Sinking and other special funds: —		
Reserve for depreciation,		22,546 52
		<hr/>
Total liabilities,		\$224,982 26
Balance, surplus,		22,743 08
		<hr/>
Total credits,		\$247,725 34
PROFIT AND LOSS ACCOUNT.		
	Dr.	Cr.
Balance from previous year,		\$23,584 43
Gross earnings from operation,		29,417 85
Miscellaneous income,		112 02
Operating expenses,	\$19,074 64	
Rebates and discounts,	545 96	
Interest on funded debt,	3,250 00	
Interest on floating debt,	75 00	
For depreciation,	2,025 62	
Dividends declared on stock,	5,400 00	
Balance, surplus,	22,743 08	
		<hr/>
	\$53,114 30	\$53,114 30

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).

<i>Additions.</i>	Items.	Totals.
Central office equipment,	\$25,000 00	
Subscribers' station equipment,	801 79	
Total exchange construction and equipment,		\$25,801 79
Additions to other permanent property,		113 83
 Total additions,		 \$25,915 62

Deductions.

Aerial cable,		64 71
 Net additions to property account for the year,		 \$25,850 91

STATISTICAL INFORMATION.

Number of subscribers,		998
Number of instruments,		1,123
Number of operators,		2
Number of pay stations,		12
Number of subscribers on party lines,		97
Number of subscribers on single lines,		901
 Underground system:—		
Conduit, feet,		18,691.20
Duct, feet,		101,798.40
Cable, feet,		56,971.20
Wire, feet,		10,841,476.80
 Overhead system:—		
Pole line, miles,		59.73
Iron wire, miles,		405.95
Copper wire, miles,		1,093.31

GENERAL REMARKS AND EXPLANATIONS.

1. "Central office equipment account: we have purchased from the Automatic Electric Company our central office equipment; \$20,000 of our license account goes toward this and \$5,000 for telephones and switches purchased in this year, making a total of \$25,000 for our central office account.

"\$3,750 has been taken from license account to make that account stand \$10,000, and charged to depreciation as royalty paid.

Central office equipment:—

Taken from license and franchise account,	\$20,000
Amount of phones and switches purchased during present year,	5,000
 Total central office equipment,	 \$25,000
 License and franchise account:—	
Original charge,	\$33,750
Charged to central office equipment,	20,000
	\$13,750
Charged to depreciation account, to make license account stand \$10,000,	3,750
	\$10,000

2. "Interest on floating debt, \$75, is for note of \$2,500, which has since been paid."

3. "General expense incidental consists principally of directors' fees, commission on contracts and auditing of books."

4. "We have made a special endeavor during the present year to bring our exchange so as to give as perfect service as possible, necessitating extra expenditures, thereby increasing expenses over previous year although the number of stations is less."

HEATH TELEPHONE COMPANY.

Location of principal business office: Shelburne Falls, Mass.

Date of organization: Association in 1895.

Date of incorporation: Feb. 14, 1898.

State in which incorporated: Massachusetts.

Date of annual meeting: first Monday after October 10.

Date when company began to give service: By the Association in 1895.

Service is given by this company over its own lines in the following towns:—

Ashfield,	Conway,	Monroe,
Buckland,	Hawley,	Rowe,
Charlemont,	Heath,	Shelburne.
Colrain,	Leyden,	

This company also gives service in the State of Vermont.

GENERAL OFFICERS AND OFFICIAL TITLES.

Walter E. Kinsman,	. . . . .	<i>President and General Manager.</i>
Fred L. Totman,	. . . . .	<i>Vice-President.</i>
Herbert Newell,	. . . . .	<i>Clerk and Treasurer.</i>

DIRECTORS AND RESIDENCES.

Walter E. Kinsman,	. . . . .	Shelburne Falls, Mass.
Fred L. Totman,	. . . . .	Conway, Mass.
Jasper N. Keller,	. . . . .	Boston, Mass.
Fred H. Smith,	. . . . .	Ashfield, Mass.
Fred W. Story,	. . . . .	Boston, Mass.
William A. Barber,	. . . . .	Leyden, Mass.
Matt. B. Jones,	. . . . .	Boston, Mass.
Alexander J. Patterson,	. . . . .	Conway, Mass.
Carl T. Keller,	. . . . .	Boston, Mass.
Charles S. Goodnow,	. . . . .	Whitingham, Vt.
Herbert Newell,	. . . . .	Shelburne Falls, Mass.

CAPITAL.

Capital authorized by charter,	. . . . .	\$1,020 00
Capital authorized by vote of company,	. . . . .	96,000 00
Capital paid in, 3,070 shares; par value, \$30,	. . . . .	92,100 00

Whole number of stockholders,	. . . . .	358
Number of stockholders resident in Massachusetts,	. . . . .	315
Amount of stock held in Massachusetts (shares),	. . . . .	2,869

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM).

	Items.	Totals.
Gross earnings from operation, ¹	. . . . .	\$18,553 27
General expense,	\$2,577 04	
Operating expense,	6,794 74	
Current repair,	3,527 60	
Reconstruction,	1,405 17	
Instrument rentals,	188 27	
Other expenses,	120 67	
Total expenses,	<hr/> 14,613 49	
Net revenue from operation,	\$3,939 78	
Fixed charges:—		
Interest on floating debt,	331 39	
Surplus for year ending June 30, 1909,	\$3,608 39	

EARNINGS (WHOLE SYSTEM).

Exchange service:—		
Subscribers' rentals,	\$15,547 98	
Miscellaneous exchange earnings,	210 24	
Total exchange service,	<hr/> \$15,758 22	
Toll service,	2,795 05	<hr/>
Total gross earnings from operation,	\$18,553 27	

EXPENSES (WHOLE SYSTEM).

General expense:—		
Salaries of officers,	\$1,614 60	
Travelling,	115 14	
Postage, printing and stationery,	73 12	
Directory,	2 50	
Taxes,	708 41	
Legal,	30 00	
Incidental,	33 27	
Total general expense,	<hr/> \$2,577 04	
Operating:—		
Superintendence,	\$601 50	
Wages of operators,	4,634 61	
Wages of others,	866 14	
Rent, light and heat,	278 00	
Postage, printing and stationery,	414 49	
Total operating expense,	<hr/> 6,794 74	
Current repair:—		
Exchange overhead lines,	\$1,448 49	
Central office equipment,	364 64	
Subscribers' equipment,	1,714 47	
Total maintenance expense,	<hr/> 3,527 60	
Instrument rentals:—		
Toll,	188 27	
Conduit, pole and roof rent,	120 67	
Total expenses, not including charges for reconstruction,	<hr/> \$13,208 32	
Amount carried forward,	<hr/> \$13,208 32	

¹ Gross earnings in Massachusetts, \$15,049.57.

	Items.	Totals.
<i>Amount brought forward,</i>		\$13,208 32
Reconstruction items:—		
Exchange overhead lines,	\$894 74	
Central office equipment,	414 65	
Subscribers' station equipment,	95 78	
Total of reconstruction items charged to expense,		1,405 17
Total of all operating expenses,		\$14,613 49

GENERAL BALANCE SHEET.

Assets.

Exchange construction,	\$92,079 88
Office furniture and fixtures,	70 50
Tools and teams,	287 72
Repair shop,	37 70
Total plant account,	\$92,475 80
Current assets:—	
Cash on hand,	\$541 61
Notes and accounts receivable,	3,928 97
Supplies on hand,	1,057 26
Total current assets,	5,527 84
Total debits,	\$98,003 64

Liabilities.

Capital stock, common,	\$92,100 00
Current liabilities:—	
Audited vouchers and accounts,	\$622 99
Salaries and wages unpaid,	300 00
Total current liabilities,	922 99
Total liabilities,	\$93,022 99
Balance, surplus,	4,980 65
Total credits,	\$98,003 64

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$1,372 26	
Gross earnings from operation,		18,553 27
Operating expenses, including charges on account of reconstruction,	\$14,613 49	
Interest on floating debt,	331 39	
Balance, surplus,	4,980 65	
	\$19,925 53	\$19,925 53

PROPERTY ACCOUNTS (ADDITIONS DURING THE YEAR).

Exchange construction:—	\$31,902 67
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STATISTICAL INFORMATION.

	In Massachusetts.	Outside Massachusetts.	Whole System.
Number of subscribers,	831	276	1,107
Number of instruments,	843	283	1,126
Number of operators,	14	4	18
Number of pay stations,	30	10	40
Number of subscribers on party lines,	824	272	1,096
Number of subscribers on single lines,	7	4	11
Overhead system:—			
Pole line, miles,	280.75	113.5	394.25
Iron wire, miles,	1,087	576	1,663
Copper wire, miles,	54	5	59

GENERAL REMARKS AND EXPLANATIONS.

1. "During this fiscal year, a change in rates and territory has been made, the Deerfield Valley Telephone and Telegraph Company has been purchased and long-distance connection established.

"Under the old method of giving each subscriber his choice of towns within which he could have service without toll charges, it was practically impossible to fix the earnings or divide the expenses accurately between exchanges. These divisions are estimated as closely as possible in making up this report."

2. "Miscellaneous current liabilities is marked 'unknown' for the reason that a portion of the receipts from toll service for the months of April, May and June must be paid to the New England Telephone and Telegraph Company; the pro rata between the two companies not having been determined."

MASSACHUSETTS TELEPHONE AND TELEGRAPH COMPANY.

Location of principal business office: 185 Franklin Street, Boston, Mass.

Date of organization: about Nov. 15, 1898.

Date of incorporation: about Nov. 15, 1898.

State in which incorporated: Massachusetts.

Date of annual meeting: first Monday in November.

Date when company began to give service: 1899.

Service is given by this company over its own lines in Boston, Stoughton and Taunton.

GENERAL OFFICERS AND OFFICIAL TITLES.

A. Norton Taylor, *President.*

William Shirden, *Secretary and Treasurer.*

DIRECTORS AND RESIDENCES.

A. Norton Taylor,	. . . . .	Newark, N. J
Fred Jones,	. . . . .	Jersey City, N. J.
William Shirden,	. . . . .	New York, N. Y.
Joseph Q. Taylor,	. . . . .	Taunton, Mass.
Dudley G. Browning,	. . . . .	Newark, N. J.

CAPITAL.

Capital authorized by charter,	\$10,000 00
Capital authorized by vote of company,	10,000 00
Capital paid in, 100 shares; par value, \$100,	10,000 00
Whole number of stockholders,	6
Number of stockholders resident in Massachusetts,	1
Amount of stock held in Massachusetts (shares),	1
Amount of stock held by the parent telephone company (shares),	80

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
May 4, 1906,	Demand, . . .	Bonds (when issued),	5	\$3,430 00
June 6, 1906,	Demand, . . .	Bonds (when issued),	5	1,750 00
July 8, 1906,	Demand, . . .	Bonds (when issued),	5	1,385 00
Aug. 4, 1906,	Demand, . . .	Bonds (when issued),	5	1,402 00
Sept. 7, 1906,	Demand, . . .	Bonds (when issued),	5	1,675 00
Oct. 6, 1906,	Demand, . . .	Bonds (when issued),	5	1,638 00
Nov. 3, 1906,	Demand, . . .	Bonds (when issued),	5	4,500 00
Dec. 10, 1906,	Demand, . . .	Bonds (when issued),	5	1,337 79
Jan. 3, 1907,	Demand, . . .	Bonds (when issued),	5	4,000 00
Feb. 6, 1907,	Demand, . . .	Bonds (when issued),	5	2,100 00
March 7, 1907,	Demand, . . .	Bonds (when issued),	5	1,600 00
April 4, 1907,	Demand, . . .	Bonds (when issued),	5	1,500 00
May 8, 1907,	Demand, . . .	Bonds (when issued),	5	1,500 00
June 5, 1907,	Demand, . . .	Bonds (when issued),	5	1,500 00
July 6, 1907,	Demand, . . .	Bonds (when issued),	5	1,500 00
Aug. 8, 1907,	Demand, . . .	Bonds (when issued),	5	1,600 00
Sept. 4, 1907,	Demand, . . .	Bonds (when issued),	5	1,600 00
Oct. 5, 1907,	Demand, . . .	Bonds (when issued),	5	5,000 00
Nov. 4, 1907,	Demand, . . .	Bonds (when issued),	5	1,600 00
Dec. 16, 1907,	Demand, . . .	Bonds (when issued),	5	1,500 00
Jan. 10, 1908,	Demand, . . .	Bonds (when issued),	5	3,500 00
Feb. 8, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
March 4, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
April 4, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
May 7, 1908,	Demand, . . .	Bonds (when issued),	5	1,500 00
June 1, 1908,	Demand, . . .	Bonds (when issued),	5	1,800 00
July 7, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
July 14, 1908,	Demand, . . .	Bonds (when issued),	5	8,861 01
Aug. 7, 1908,	Demand, . . .	Bonds (when issued),	5	1,800 00
Sept. 12, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
Oct. 26, 1908,	Demand, . . .	Bonds (when issued),	5	3,500 00
Oct. 10, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
Nov. 7, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
Dec. 5, 1908,	Demand, . . .	Bonds (when issued),	5	1,600 00
Jan. 6, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
Feb. 9, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
March 1, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
April 1, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
May 1, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
June 1, 1909,	Demand, . . .	Bonds (when issued),	5	1,600 00
Total amount of bonds and notes,				\$55,778 80
Capital paid in,				10,000 00
Total liability for capital and loans,				\$95,778 80

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	. . . . .	\$5,561 47
General expense,	\$6,191 35	
Operating expense,	6,603 42	
Current repair,	1,906 19	
Total expenses,	<hr/>	14,700 96
Net deficit for operation,	\$9,139 49	
Real estate deficit,	<hr/>	3,218 80
Deficit for year ending June 30, 1909,	<hr/>	\$12,358 29

EARNINGS.

Gross earnings from operation:—		
Exchange service :—		
Subscribers' rentals,	\$4,911 47	
Conduit, pole and roof rent,	<hr/>	650 00
Revenue from operation,	<hr/>	\$5,561 47

EXPENSES.

General expense:—		
Salaries,	\$1,500 00	
Wages of clerks,	364 00	
Rent, light and heat,	1,500 00	
Travelling,	126 00	
Postage, printing and stationery,	40 00	
Taxes,	133 73	
Legal,	2,000 00	
Damages and compensation,	300 00	
Insurance,	152 62	
Incidental,	75 00	
Total general expense,	<hr/>	\$6,191 35
Operating:—		
Superintendence,	\$1,854 84	
Wages of operators,	1,716 00	
Wages of others,	1,307 58	
Rent, light and heat,	1,690 00	
Postage, printing and stationery,	10 00	
Incidental,	25 00	
Total operating expenses,	<hr/>	6,603 42
Current repair:—		
Exchange overhead lines,	\$280 00	
Exchange underground lines,	800 00	
Central office equipment,	225 00	
Subscribers' equipment,	500 00	
Incidental,	101 19	
Total maintenance expense,	<hr/>	1,906 19
Total of all operating expenses,	<hr/>	\$14,700 96

GENERAL BALANCE SHEET.

Assets.

	Items.	Totals.
Exchange construction:—		
Overhead lines,	\$13,461 60	
Underground lines,	92,872 41	
Central office equipment,	14,613 00	
Subscribers' state equipment,	4,059 00	
Total exchange construction and equipment, —————		\$125,006 01
Toll construction:—		
Overhead lines,	\$20,718 25	
Office furniture and fixtures,	2,328 00	
Tools and teams,	144 95	
Total plant account,		\$148,197 21
Current assets:—		
Cash on hand,	\$289 22	
Notes and accounts receivable,	1,092 55	
Supplies on hand,	2,934 36	
Total current assets,		4,316 13
Total debits,		\$152,513 34

Liabilities.

Capital stock,		\$10,000 00
Current liabilities:—		
Loans and notes payable,		85,778 80
Total liabilities,		\$95,778 80
Balance, surplus,		56,734 54
Total credits,		\$152,513 34

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,		\$87,743 15
Gross earnings from operation,		6,511 47
Real estate revenue (subrentals),		19,027 83
Operating expenses,	\$14,700 96	
Loss of assets,	18,650 32	
Other items:—		
Operating and maintaining leased building, . . .	18,854 23	
Taxes and insurance on building,	3,392 40	
Balance, surplus,	56,734 54	
	—————	
	\$112,332 45	\$112,332 45

STATISTICAL INFORMATION.

Number of subscribers,		345
Number of instruments,		345
Number of operators,		6
Number of subscribers on party lines,		195
Number of subscribers on single lines,		150

Underground system:—

Conduit, feet,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	20,299
Duct, feet,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	284,598
Cable, feet,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	31,761
Wire, feet,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	2,935,225

Overhead system:—

Pole line, miles,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	60.5
Iron wire, miles,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	408

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY.

Location of principal business office: 101 Milk Street, Boston, Mass.

Date of organization: Oct. 19, 1883.

Date of incorporation: Oct. 19, 1883.

State in which incorporated: New York.

Date of annual meeting: first Monday in May.

Date when company began to give service: October, 1883.

Cities and towns in Massachusetts in which service is given by the company over its own lines:—

Acton,	Cambridge,	Framingham,
Adams,	Canton,	Franklin,
Agawam,	Carlisle,	Gardner,
Alford,	Charlton,	Georgetown,
Amesbury,	Chelmsford,	Gloucester,
Amherst,	Chelsea,	Goshen,
Andover,	Cheshire,	Grafton,
Arlington,	Chester,	Granby,
Ashburnham,	Chesterfield,	Granville,
Ashby,	Chicopee,	Great Barrington,
Ashland,	Clarksburg,	Greenfield,
Athol,	Clinton,	Greenwich,
Avon,	Cohasset,	Groton,
Auburn,	Concord,	Groveland,
Ayer,	Conway,	Hadley,
Barre,	Cummington,	Hamilton,
Becket,	Dalton,	Hampden,
Bedford,	Dana,	Hancock,
Belchertown,	Danvers,	Hardwick,
Bellingham,	Dedham,	Harvard,
Belmont,	Deerfield,	Hatfield,
Berlin,	Douglas,	Haverhill,
Bernardston,	Dover,	Hawley,
Beverly,	Dracut,	Hingham,
Billerica,	Dudley,	Hinsdale,
Blandford,	Dunstable,	Holbrook,
Bolton,	Easthampton,	Holden,
Boston,	East Longmeadow,	Holland,
Boxborough,	Egremont,	Holliston,
Boxford,	Enfield,	Holyoke,
Boylston,	Erving,	Hopedale,
Braintree,	Essex,	Hopkinton,
Brimfield,	Everett,	Hubbardston,
Brookfield,	Fitchburg,	Hudson,
Brookline,	Florida,	Hull,
Burlington,	Foxborough,	Huntington,

Hyde Park,	North Reading,	Sturbridge,
Ipswich,	Northampton,	Sudbury,
Lancaster,	Northborough,	Sunderland,
Lanesborough,	Northbridge,	Sutton,
Lawrence,	Northfield,	Swampscott,
Lee,	Norwood,	Templeton,
Leicester,	Orange,	Tewksbury,
Lenox,	Otis,	Tolland,
Leominster,	Oxford,	Topsfield,
Lexington,	Palmer,	Townsend,
Leyden,	Paxton,	Tyngsborough,
Lincoln,	Peabody,	Tyringham,
Littleton,	Pelham,	Upton,
Longmeadow,	Pepperell,	Uxbridge,
Lowell,	Peru,	Wakefield,
Ludlow,	Petersham,	Wales,
Lunenburg,	Phillipston,	Walpole,
Lynn,	Pittsfield,	Waltham,
Lynnfield,	Plainfield,	Ware,
Malden,	Prescott,	Warren,
Manchester,	Princeton,	Warwick,
Marblehead,	Quincy,	Washington,
Marlborough,	Randolph,	Watertown,
Maynard,	Reading,	Wayland,
Medfield,	Revere,	Webster,
Medford,	Rockport,	Wellesley,
Medway,	Rowley,	Wendell,
Melrose,	Royalston,	Wenham,
Mendon,	Russell,	West Boylston,
Merrimac,	Rutland,	West Brookfield,
Methuen,	Salem,	West Newbury,
Middlefield,	Salisbury,	West Springfield,
Middleton,	Sandisfield,	West Stockbridge,
Milford,	Saugus,	Westborough,
Millbury,	Savoy,	Westfield,
Millis,	Sharon,	Westford,
Milton,	Sheffield,	Westhampton,
Monson,	Shelburne,	Westminster,
Montague,	Sherborn,	Weston,
Monterey,	Shirley,	Westwood,
Montgomery,	Shrewsbury,	Weymouth,
Nahant,	Somerville,	Whately,
Natick,	Southampton,	Wilbraham,
Needham,	South Hadley,	Williamsburg,
New Ashford,	Southborough,	Williamstown,
New Braintree,	Southbridge,	Wilmington,
New Marlborough,	Southwick,	Winchendon,
Newbury,	Spencer,	Winchester,
Newburyport,	Springfield,	Windsor,
Newton,	Sterling,	Winthrop,
Norfolk,	Stockbridge,	Woburn,
North Adams,	Stoneham,	Worcester,
North Andover,	Stoughton,	Worthington,
North Brookfield,	Stow,	Wrentham.

This company also gives service in the States of Maine, New Hampshire and Vermont.

GENERAL OFFICERS AND OFFICIAL TITLES.

Thomas Sherwin,	<i>President.</i>
Jasper N. Keller,	<i>Vice-President.</i>
Henry S. Hyde,	<i>Vice-President.</i>
Francis A. Houston,	<i>General Manager.</i>
William R. Driver,	<i>Treasurer.</i>
Edmund S. Willard,	<i>Assistant Treasurer.</i>
Edmund W. Longley,	<i>Secretary, Auditor and Comptroller.</i>
Leslie D. Knowlton,	<i>Assistant Auditor.</i>
Matt. B. Jones,	<i>Counsel.</i>
William J. Denver,	<i>Assistant General Manager.</i>
Fred W. Story,	<i>Assistant to the Vice-President.</i>
Moses G. Parker,	<i>Agent.</i>

DIRECTORS AND RESIDENCES.

Charles F. Ayer,	Boston, Mass.
John H. Cahill,	New York, N. Y.
Francis H. Dewey,	Worcester, Mass.
William H. Elliott,	Keene, N. H.
Edward J. Hall,	Morristown, N. J.
John F. Hill,	Augusta, Me.
Winfield S. Hutchinson,	Newton, Mass.
Henry S. Hyde,	Springfield, Mass.
Matt. B. Jones,	Newton, Mass.
Moses G. Parker,	Lowell, Mass.
Thomas Sherwin,	Jamaica Plain, Mass.
Theodore N. Vail,	Lyndonville, Vt.

CAPITAL.

Capital authorized by articles of association, and increased from time to time under the general laws,	\$50,000,000 00
Capital authorized by vote of company,	39,186,800 00
Capital paid in, 356,244 shares; par value, \$100,	35,624,400 00
Whole number of stockholders,	3,832
Number of stockholders resident in Massachusetts,	3,401
Amount of stock held in Massachusetts (shares),	136,519
Amount of stock held by parent telephone company (shares),	208,058

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
April 1, 1891,	April 1, 1906,	Debenture,	None.	\$5,000 00
April 1, 1895,	April 1, 1915,	Debenture,	5	500,000 00
April 1, 1896,	April 1, 1916,	Debenture,	5	500,000 00
April 1, 1899,	April 1, 1919,	Debenture,	5	500,000 00
Jan. 1, 1900,	Jan. 1, 1930,	Debenture,	4	1,000,000 00
Oct. 1, 1904, ¹	Oct. 1, 1909,	Real estate, Fort Hill Square, Boston, .	3½	200,000 00
April 25, 1905, ¹	April 20, 1906,	Real estate, Worcester,	4	12,000 00
March 19, 1908,	Demand, .	Granville Telephone Company, . . .	6	2,600 00
Total amount of bonds and notes,				
\$2,719,600 00				
Capital paid in,				
\$35,624,400 00				
Total liability for capital and loans,				
\$38,344,000 00				

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM).

	Items.	Totals.
Gross earnings from operation,	\$11,351,098 31	
Less rebates and discounts, ²	319,808 56	
Revenue from operation, ³		\$11,031,289 75
General expense,	\$1,375,760 20	
Operating expense,	2,960,285 79	
Current repair,	1,398,396 01	
Reconstruction,	649,258 23	
Deferred maintenance,	1,351,458 02	
Instrument rentals,	507,885 68	
Other expenses,	63,428 89	
Total expenses,		8,306,472 82
Net revenue from operation,		\$2,724,816 93
Miscellaneous income: —		
Real estate revenue,	\$30,073 42	
Income from securities,	210,012 15	
Other miscellaneous income,	19,918 78	
Total miscellaneous income,		260,004 35
Total income above expenses,		\$2,984,821 28

¹ Assumed by New England Telephone and Telegraph Company.² See note 3, page 258.³ Revenue from operation in Massachusetts (see note 1, page 258): —

Gross earnings from operation,		\$9,339,940 99
Less rebates and discounts,		253,525 65
Revenue from operation,		\$9,086,415 34
Miscellaneous income,		217,106 81
Total gross earnings and income,		\$9,303,522 15

Fixed charges: —	Items.	Totals.
Interest on funded debt,	\$115,000 00	
Interest on floating debt,	46,035 17	
Total fixed charges,	<u> </u>	\$161,035 17
Surplus of net income above fixed charges,		\$2,823,786 11
Dividends declared: —		
1½ per cent. on \$35,509,500,	\$532,642 50	
6 per cent on \$35,624,400,	2,137,464 00	
Total dividends declared,	<u> </u>	\$2,670,106 50
Less amount of dividend account charged to surplus, ¹	475,467 00	
	<u> </u>	2,194,639 50
Surplus for year ending June 30, 1909,		\$629,146 61
EARNINGS (WHOLE SYSTEM).		
Gross earnings from operation: —		
Exchange service: —		
Subscribers' rentals,	\$7,886,923 27	
Pay station local tolls,	468,095 09	
Terminal charges on long-distance business,	49,267 12	
Leased line rentals,	19,381 19	
Miscellaneous exchange earnings,	24,080 20	
Total exchange service,	<u> </u>	\$8,447,746 87
Toll service: —		
Toll service,	\$2,728,054 76	
Leased line rentals,	43,797 44	
Miscellaneous toll earnings,	299 40	
Total toll service,	<u> </u>	2,772,151 60
Private line: —		
Rental of instruments,	\$15,539 06	
Miscellaneous earnings,	47,770 37	
Total private line,	<u> </u>	63,309 43
Sublicensee: —		
Rental of instruments,	\$42,049 69	
Miscellaneous earnings,	25,840 72	
Total sublicensee,	<u> </u>	67,890 41
Total gross earnings from operation,		\$11,351,098 31
Less rebates and discounts,		319,808 56
Revenue from operation,		\$11,031,289 75
Miscellaneous income: —		
Real estate revenue,	\$30,073 42	
Dividends on stocks of other companies,	57,289 21	
Interest on bonds and notes of other companies and running accounts,	152,722 94	
Interest on bank deposits,	12,266 41	
Profit on labor and material,	\$10,131 50	
Less rebates,	2,479 13	
	<u> </u>	7,652 37
Total miscellaneous income,	<u> </u>	260,004 35
Total gross earnings and income,		\$11,291,294 10

¹ See note 5, page 259.

EXPENSES (WHOLE SYSTEM).

	Items.	Totals.
General expense: —		
Salaries of officers, ¹	\$80,270 45	
Salaries of others,	34,402 68	
Wages of clerks,	118,754 33	
Rent, light and heat,	34,534 07	
Travelling,	7,843 18	
Postage, printing and stationery,	129,688 01	
Directory,	189,645 96	
Taxes,	513,562 45	
Legal,	49,300 68	
Damages and compensation,	30,027 66	
Insurance,	38,210 78	
Incidental (including cost of making inventory of the company's plant, \$117,153.41),	149,519 95	
Total general expense,	<u>149,519 95</u>	<u>\$1,375,760 20</u>
Operating: —		
Superintendence, ¹	\$233,745 39	
Wages of operators,	1,597,235 59	
Wages of others,	541,097 36	
Rent, light and heat,	288,762 90	
Postage, printing and stationery,	72,515 97	
Advertising and canvassing,	148,836 35	
Incidental,	78,092 23	
Total operating expense,	<u>78,092 23</u>	<u>2,960,285 79</u>
Current repairs: ² —		
Exchange overhead lines,	\$427,781 79	
Exchange underground lines,	39,940 63	
Exchange submarine lines,	1,454 15	
Central office equipment,	263,634 85	
Subscribers' equipment,	347,705 58	
Toll overhead lines,	90,869 78	
Toll underground lines,	1,738 54	
Toll submarine lines,	242 48	
Incidental,	88,009 42	
Supervision,	137,018 79	
Total maintenance expense,	<u>137,018 79</u>	<u>1,398,396 01</u>
Instrument rentals: —		
Exchange,	\$373,996 79	
Toll,	113,330 97	
Private line,	3,179 19	
Sublicensee,	17,378 73	
Total instrument rentals,	<u>17,378 73</u>	<u>507,885 68</u>
Messenger expense,	3,152 80	
Conduit, pole and roof rent,	42,722 27	
Sublicensee expenses,	17,553 82	
Total expenses, not including charges for reconstruction and deferred repairs,	<u>17,553 82</u>	<u>\$6,305,756 57</u>
Amount carried forward,	<u>\$6,305,756 57</u>	

¹ See note 6, page 259.² See note 4, page 258.

	Items.	Totals.
<i>Amount brought forward,</i>		<i>\$6,305,756 57</i>
Reconstruction items charged to expense:¹ —		
Exchange overhead lines,	\$272,868 11	
Exchange underground lines,	51,600 79	
Exchange submarine lines, ²	392 58	
Central office equipment,	47,450 64	
Subscribers' station equipment,	236,266 44	
Toll overhead lines,	35,385 49	
Toll underground lines,	3,760 54	
Toll submarine lines,	401 18	
Incidental,	1,917 62	
Total of reconstruction items charged to expense,	649,258 23	
Deferred maintenance items charged to expense,	1,351,458 02	
Total of all operating expenses,		\$8,306,472 82

GENERAL BALANCE SHEET.

Assets.

Exchange construction: —		
Right of way,	\$58,835 06	
Overhead lines,	10,599,595 08	
Underground lines,	6,574,292 94	
Submarine lines,	22,559 85	
Central office equipment,	4,085,041 38	
Subscribers' station equipment,	2,904,377 29	
Total exchange construction and equipment,	\$24,244,701 60	
Toll construction: —		
Right of way,	\$15,946 05	
Overhead lines,	4,705,229 27	
Underground lines,	643,738 48	
Submarine lines,	5,788 22	
Total toll construction,	5,370,702 02	
Construction in process,		499,331 75
Other real estate required for operation,		1,414,811 23
Investment real estate not required for operation,		118,018 15
Office furniture and fixtures,		185,202 39
Tools and teams,		167,153 15
Repair shop,		115,861 46
Total plant account,		\$32,115,781 75
Contracts and licenses,		4,268,000 00
Securities of other companies,		2,514,325 58
Current assets: —		
Cash on hand,	\$871,739 07	
Notes and accounts receivable,	4,356,165 10	
Supplies on hand,	1,462,643 72	
Unexpired insurance,	13,941 57	
Total current assets,	6,704,489 46	
Discount on toll tickets,		144 01
Total debits,		\$45,602,740 80

¹ See note 4, page 258.² Credit item.

	<i>Liabilities.</i>	Items.	Totals.
Capital stock, . . . . .		. \$35,624,400	00
Bonded debt, . . . . .		. 2,505,000	00
Real estate mortgages, . . . . .		. 212,000	00
Current liabilities:—			
Loans and notes payable,		\$2,600	00
Audited vouchers and accounts,		273,603	14
Dividends not called for,		336	00
Matured interest coupons, unpaid (including due July 1, 1909, \$20,000),		22,845	00
Instalment account of stock,		43,100	00
Total current liabilities,			\$342,484 14
Accrued liabilities:—			
Interest accrued but not due,		\$2,043	53
Interest coupons due Oct. 1, 1909,		18,750	00
Taxes accrued but not due,		227,907	15
Dividends payable July 15, 1909,		534,366	00
Rental charged but not yet accrued,		76,979	09
Other line service,		78,964	04
Directory,		50,280	43
Outstanding toll tickets,		816	71
Total accrued liabilities,			990,106 95
Sinking and other special funds:—			
For fire insurance,		\$213,877	34
For accident insurance,		120,733	51
For uncollectible accounts,		485,441	92
For premium account,		3,802	35
For maintenance,		2,689,016	94
Total sinking and other special funds,			3,512,872 06
Total liabilities,		\$43,186,863	15
Balance, surplus,		2,415,877	65
Total credits,		\$45,602,740	80

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,		\$2,462,198 04
Gross earnings from operation,		11,351,098 31
Real estate revenue,		30,073 42
Dividends received on stock owned by company,		57,289 21
Interest received on bonds and notes,		35,497 10
Interest on running accounts,		114,764 84
Interest on bank balances,		12,266 41
Interest on instalment stock,		1 00
New England Telephone and Telegraph Company bonds,		2,460 00
Profit on material and labor furnished,		7,652 37
Operating expenses, including charges on account of reconstruction and deferred repairs,	\$8,166,964	74
Rebates and discounts,	319,808	56
Interest on funded debt,	115,000	00
Interest on floating debt,	46,035	17

Amounts carried forward, \$8,647,808 47 \$14,073,300 70

	Dr.	Cr.
<i>Amounts carried forward,</i>	\$8,647,808 47	\$14,073,300 70
For depreciation: —		
For material in stock at the supply department,	139,508 08	
For stocks and bonds,	200,000 00	
Dividends declared on stock, 6 per cent.,	2,135,740 50	
Dividends declared on stock, 1½ per cent., due July 15, 1909,	534,366 00	
Balance, surplus,	2,415,877 65	
	<hr/>	<hr/>
	\$14,073,300 70	\$14,073,300 70

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).*Additions.*

	Items.	Totals.
Exchange construction: —		
Right of way,	\$14,549 33	
Overhead lines,	487,191 72	
Underground lines,	154,587 69	
Submarine lines,	3,182 33	
Central office equipment,	445,703 84	
Subscribers' station equipment,	377,531 52	
Total exchange construction and equipment,	<hr/>	\$1,482,746 43
Toll construction: —		
Right of way,	\$3,521 05	
Overhead lines,	106,084 80	
Underground lines,	10,952 89	
Submarine lines, ¹	12 00	
Total toll construction,	<hr/>	120,546 74
Sublicensee: —		
Central office equipment,	\$1,619 77	
Subscribers' station equipment,	6,474 40	
Total sublicensee,	<hr/>	8,094 17
Additions to other real estate required for operation,	8,419 08	
Office furniture and fixtures,	38,581 85	
Tools and teams, ¹	14,846 06	
Repair shop,	2,103 23	
Total additions,	<hr/>	\$1,645,645 44

Deductions.

Sold to sublicensees: —		
Exchange overhead lines,	\$174,273 01	
Exchange underground lines,	13,657 89	
Central office equipment,	22,547 95	
Subscribers' station equipment,	69,234 30	
Toll overhead lines,	75,760 92	
Tools,	682 46	
Office furniture,	1,824 96	
Total deductions,	<hr/>	357,981 49
		\$1,287,663 95
Construction in process,		150,153 03
Net additions to property account for the year,		<hr/> <hr/> \$1,437,816 98

¹ Credit item.

STATISTICAL INFORMATION.

	Boston and Suburban Division.	Massachusetts, Outside Boston and Suburban Division.	All Massachusetts.	Outside of Massachusetts.	Whole System.
Number of subscribers,	104,320	85,807	190,127	54,508	244,635
Number of stations,	107,440	88,348	195,788	56,443	252,231
Number of operators,	1,904	1,165	3,069	746	3,815
Number of pay stations,	3,120	2,541	5,661	1,935	7,596
Number of subscribers on party lines,	85,953	74,534	160,487	48,640	209,127
Number of subscribers on single lines,	18,367	11,273	29,640	5,868	35,508
Underground system:—					
Conduit, feet,	1,435,327	1,283,051	2,718,378	312,658	3,031,036
Duct, feet, ¹	8,506,313	5,102,812	13,609,125	1,332,951	14,942,076
Cable, feet,	3,902,152	2,534,494	6,436,646	714,388	7,151,034
Wire, miles,	210,689	108,600	319,289	35,326	354,615
Submarine system:—					
Cable, feet,	22,146	8,023	30,169	123,856	154,025
Wire, miles,	417	146	563	517	1,080
Overhead system:—					
Pole line, miles,	1,076	5,034	6,110	8,538	14,048
Iron wire, miles,	2,210	24,076	26,286	33,541	59,827
Copper wire, miles,	40,010	58,647	98,657	60,592	159,249

GENERAL REMARKS AND EXPLANATIONS.

1. "The revenue within the State which is here reported is the revenue which has been collected within the State of Massachusetts. No deduction has been made for such portion of tolls as were collected within the State but transmitted partly over lines lying without the State. Neither has the separation been made of tolls originating at points outside of the territory of the New England Telephone and Telegraph Company but terminating at points within such territory.

" If such separation were made, it would probably show that a considerable sum collected within the State of Massachusetts had been earned on toll lines located outside of that State."

2. "Distribution of plant account between the various classes of exchange and toll construction is a continuation of those reported by Stone & Webster in their report of April 22, 1907, page 8, and return made last year."

3. "Rebates and discounts include charges incident to maintaining the reserve for uncollectible accounts, the regular discount of 20 per cent. on monthly tolls in excess of \$10 from a single telephone, discounts for prompt payment of sublicensee rentals, and actual losses from uncollectible bills."

4. "Separation of current repair and of reconstruction between exchange and toll accounts has been made as accurately as it has been found possible to make it, but no practical way has been found to properly divide such expenses on pole

¹ Does not include underground connections.

lines which carry both toll and exchange wires, cables that carry both toll and exchange circuits, switchboards that are used for both toll and exchange connections, wires which at varying times may be used for either toll or exchange purposes, underground conduits which carry both exchange and toll cables, or other portions of the plant that serve partly for exchange and partly for toll purposes. Consequently and unavoidably, the figures here given showing separation between current repair and reconstruction must be considered inaccurate."

5. "One dividend which would have been declared in January, if the practice of previous years had been followed, was declared in December for the purpose of making the dividend year conform with the fiscal year of the company, and an amount equal to the first dividend declared in 1908 was charged against the surplus account."

6. "Reduction in general salaries and wages and increase in operating superintendence is mainly owing to different method of charging, incident to change to the so-called functional organization, which generally went into effect in August, 1908."

7. "Inventory values as determined by the Highway Commission have not yet been entered in the books."

PROVIDENCE TELEPHONE COMPANY OF MASSACHUSETTS.

Location of principal business office: 125 Milk Street, Boston, Mass.

Date of organization: Dec. 2, 1890.

Date of incorporation: Feb. 24, 1891.

State in which incorporated: Massachusetts.

Date of annual meeting: first Tuesday in December.

Date when company began to give service: April 28, 1891.

Service is given by this company over its own lines in the towns of

Attleborough,	North Attleborough,	Rehoboth,
Bellingham,	Norton,	Seekonk.
Blackstone,	Plainville,	

GENERAL OFFICERS AND OFFICIAL TITLES.

Dexter B. Potter,	.	.	.	.	.	.	<i>President.</i>
Charles T. Howard,	.	.	.	.	.	.	<i>Treasurer.</i>
Joseph F. Beck,	.	.	.	.	.	.	<i>General Manager.</i>
Robert W. Devonshire,	.	.	.	.	.	.	<i>Clerk.</i>

DIRECTORS AND RESIDENCES.

Dexter B. Potter,	.	.	.	.	.	.	Providence, R. I.
Charles T. Howard,	.	.	.	.	.	.	Coventry, R. I.
Joseph F. Beck,	.	.	.	.	.	.	Providence, R. I.
Robert W. Devonshire,	.	.	.	.	.	.	Boston, Mass.
Thomas Sherwin,	.	.	.	.	.	.	Boston, Mass.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	.	\$10,000 00
Capital authorized by vote of company,	.	.	.	.	.	.	80,000 00
Additional capital authorized by Commissioner of Corporations,	.	.	.	.	.	.	70,000 00
Capital paid in, 800 shares; par value, \$100, .	.	.	.	.	.	.	80,000 00

Whole number of stockholders,	.	.	.	.	.	.	6
Number of stockholders resident in Massachusetts,	.	.	.	.	.	.	2
Amount of stock held in Massachusetts (shares),	.	.	.	.	.	.	2
Amount of stock held by the parent telephone company (shares),	.	.	.	.	.	.	795

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
Feb. 16, 1909,	Aug. 16, 1909,	—	5	\$10,000 00
Total amount of bonds and notes,				\$10,000 00
Capital paid in,				80,000 00
Total liability for capital and loans,				\$90,000 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	\$49,735 28	
Less rebates and discounts,	488 64	
Revenue from operation,		\$49,246 64
General expense,	\$7,246 44	
Operating expense,	13,097 58	
Current repair,	9,706 96	
Reconstruction,	6,526 27	
Deferred maintenance,	3,337 94	
Instrument rentals,	2,211 33	
Other expenses,	556 92	
Total expenses,		42,683 44
Net revenue from operation,		\$6,563 20
Miscellaneous income,	\$839 34	
Interest and conduit rental,	190 05	
Total miscellaneous income,		1,029 39
Total income above expenses,		\$7,592 59
Fixed charges: —		
Interest on floating debt,		1,154 47
Surplus for the year ending June 30, 1909,		\$6,438 12

EARNINGS.

Gross earnings from operation: —

Exchange service: —		
Subscribers' rentals,	\$41,440 42	
Pay station local tolls,	957 17	
Terminal charges on long-distance business,	1,104 91	
Miscellaneous exchange earnings,	353 42	
Total exchange service,		\$43,855 92
Toll service,		5,834 36
Private line: —		
Rental instruments,		45 00
Total gross earnings from operation,		\$49,735 28
Less rebates and discounts,		488 64
Revenue from operation,		\$49,246 64
Miscellaneous income,		1,029 39
Total gross earnings and income,		\$50,276 03

EXPENSES.

	Items.	Totals.
General expense:—		
Salaries of officers,	\$1,020 00	
Salaries of others,	1,620 00	
Wages of clerks,	180 00	
Rent, light and heat,	316 68	
Travelling,	110 26	
Postage, printing and stationery,	307 20	
Directory,	852 45	
Taxes,	1,488 99	
Insurance,	401 08	
Incidental,	949 78	
Total general expense,	<hr/> _____	\$7,246 44
Operating:—		
Superintendence,	\$366 00	
Wages of operators,	7,105 69	
Wages of others,	1,786 06	
Rent, light and heat,	2,645 83	
Postage, printing and stationery,	174 93	
Advertising and canvassing,	205 97	
Incidental,	813 10	
Total operating expense,	<hr/> _____	\$13,097 58
Current repair:—		
Exchange overhead lines,	\$6,194 33	
Exchange underground lines,	86 35	
Central office equipment,	2,299 42	
Subscribers' equipment,	1,097 22	
Incidental,	29 64	
Total maintenance expense,	<hr/> _____	9,706 96
Instrument rentals,		2,211 33
Conduit, pole and roof rent,		556 92
		<hr/> _____
Total expenses, not including charges for reconstruction and deferred repairs,		\$32,819 23
Reconstruction items charged to expense:—		
Exchange overhead lines,	\$2,601 07	
Exchange underground lines,	578 53	
Central office equipment,	686 81	
Subscribers' station equipment,	2,659 86	
Total of reconstruction items charged to expense,	<hr/> _____	6,526 27
Deferred maintenance items charged to expense,		3,337 94
		<hr/> _____
Total of all operating expenses,		\$42,683 44

GENERAL BALANCE SHEET.

Assets.

Exchange construction:—		
Overhead lines,	\$29,176 13	
Underground lines,	44,430 17	
Central office equipment,	13,172 36	
Subscribers' station equipment,	17,263 57	
Total exchange construction and equipment,	<hr/> _____	\$104,042 23
Amount carried forward,		\$104,042 23

	Items.	Totals.
<i>Amount brought forward,</i>		\$104,042 23
Toll construction:—		
Overhead lines,	\$4,829 17	
Underground lines,	525 64	
Total toll construction,	5,354 81	
Construction in process,		126 71
Office furniture and fixtures,		162 75
		50
Total plant account,	\$109,686	50
Current assets:—		
Cash on hand,	\$13,743 87	
Notes and accounts receivable,	2,764 78	
Supplies on hand,	1,569 73	
Total current assets,	18,078 38	
		88
Total debits,		\$127,764

<i>Liabilities.</i>	
Capital stock, common,	\$80,000 00
Current liabilities:—	
Loans and notes payable,	\$10,000 00
Audited vouchers and accounts,	21,397 53
Salaries and wages unpaid,	134 68
Total current liabilities,	31,532 21
Accrued liabilities:—	
Reserve for private line,	17 50
Sinking and other special funds:—	
Reserve for bad accounts,	\$654 54
Depreciation reserve,	4,537 94
Extraordinary repair reserve,	1,200 00
Total sinking and other special funds,	6,392 48
Total liabilities,	\$117,942 19
Balance, surplus,	9,822 69
Total credits,	\$127,764 88

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$3,384 57	
Gross earnings from operation,	49,735 28	
Miscellaneous income,	1,029 39	
Operating expenses, including charges on account of reconstruction and deferred repairs,	\$42,683 44	
Rebates and discounts,	488 64	
Interest on floating debt,	1,154 47	
Balance, surplus,	9,822 69	
		\$54,149 24
		\$54,149 24

PROPERTY ACCOUNTS (ADDITIONS AND DEDUCTIONS DURING THE YEAR).

Additions.

Exchange construction:—	Items.	Totals.
Overhead lines,	\$4,112 85	
Underground lines,	1,335 52	
Central office equipment,	3,114 85	
Subscribers' station equipment,	7,240 64	
Total exchange construction and equipment,		\$15,803 86
Office furniture and fixtures,		52 00
Construction in process,		126 71
 Total additions,		\$15,982 57

Deductions.

Overhead lines,	\$1,410 37
Underground lines,	870 90
Central office equipment,	686 81
Subscribers' station equipment,	5,772 84
Total deductions,	

Net additions to property account for the year, \$7,241 65

STATISTICAL INFORMATION.

Number of subscribers,	1,393
Number of instruments,	1,581
Number of operators,	20
Number of pay stations,	31
Number of subscribers on party lines,	1,326
Number of subscribers on single lines,	67
 Underground system:—	
Conduit, feet,	19,924.7
Duct, feet,	51,213.7
Cable, feet,	36,356
Wire, feet,	8,630,280
 Overhead system:—	
Pole line, miles,	60.87
Iron wire, miles,	\$14.15
Copper wire, miles,	530.28

GENERAL REMARKS AND EXPLANATIONS.

"Last year we reported certain stations lying near boundary line between Rhode Island and this State which were operated in exchanges in Rhode Island. This year we have not included such stations, regarding them as Rhode Island stations. There are now 299 such subscribers, 304 such instruments and 2 such subscribers on single lines. These are subscribers to service of Providence Telephone Company (of Rhode Island) and not of this company."

THE SOUTHERN MASSACHUSETTS TELEPHONE COMPANY.

Location of principal business office: 101 Milk Street, Boston, Mass.

Date of organization: Feb. 17, 1880.

Date of incorporation: Feb. 17, 1880.

State in which incorporated: Massachusetts.

Date of annual meeting: second Saturday in February.

Date when company began to give service: February, 1880.

Cities and towns in Massachusetts in which service is given by the company over its own lines: —

Abington,	Falmouth,	Plymouth,
Acushnet,	Freetown,	Plympton,
Avon,	Gay Head,	Provincetown,
Barnstable,	Halifax,	Raynham,
Berkley,	Hanover,	Rehoboth,
Bourne,	Hanson,	Rochester,
Brewster,	Harwich,	Rockland,
Bridgewater,	Kingston,	Sandwich,
Brockton,	Lakeville,	Scituate,
Carver,	Mansfield,	Somerset,
Chatham,	Marion,	Swansea,
Chilmark,	Marshfield,	Taunton,
Dartmouth,	Mashpee,	Tisbury,
Dennis,	Mattapoisett,	Truro,
Dighton,	Middleborough,	Wareham,
Duxbury,	Nantucket,	Wellfleet,
East Bridgewater,	New Bedford,	West Bridgewater,
Eastham,	Norton,	West Tisbury,
Easton,	Norwell,	Westport,
Edgartown,	Oak Bluffs,	Whitman,
Fairhaven,	Orleans,	Yarmouth.
Fall River,	Pembroke,	

This company also gives service in the State of Rhode Island.

GENERAL OFFICERS AND OFFICIAL TITLES.

Thomas Sherwin,	President.
William R. Driver,	Treasurer.
Edmund S. Willard,	Assistant Treasurer.
Edmund W. Longley,	Clerk, Auditor and Comptroller.
Jasper N. Keller,	Vice-President.
Francis A. Houston,	General Manager.
William J. Denver,	Assistant General Manager.
Leslie D. Knowlton,	Assistant Auditor.
Webster A. Arey	Assistant Auditor.

DIRECTORS AND RESIDENCES.

Charles F. Ayer,	Boston, Mass.
Charles W. Clifford,	New Bedford, Mass.
Theodore N. Vail,	Lyndonville, Vt.
Francis A. Houston,	Concord, Mass.
Jasper N. Keller,	Surry, N. H.
Moses G. Parker,	Lowell, Mass.
Thomas Sherwin,	Jamaica Plain, Mass.

CAPITAL.

Capital authorized by charter, and increased under the general laws,		\$600,000 00
Capital authorized by vote of company,		600,000 00
Capital paid in, 6,000 shares; par value, \$100,		600,000 00
Whole number of stockholders,		10
Number of stockholders resident in Massachusetts,		7
Amount of stock held in Massachusetts (shares),		55
Amount of stock held by the parent telephone company (shares),		5,925

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
June 1, 1896,	June 1, 1916,	Debenture,	5	\$200,000 00
Total amount of bonds and notes,				\$200,000 00
Capital paid in,				600,000 00
Total liability for capital and loans (not including floating debt, \$1,407,366.40),				\$800,000 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM).

	Items.	Totals.
Gross earnings from operation, ¹	\$783,250 69
Less rebates and discounts,	13,948 89
Revenue from operation,		\$769,301 80
General expense,		\$58,187 73
Operating expense,		221,442 56
Current repair,		119,755 98
Reconstruction,		52,394 13
Deferred maintenance,		110,031 46
Instrument rentals,		34,388 84
Other expenses,		9,784 52
Total expenses,		605,985 22
Net revenue from operation,		\$163,316 58
Miscellaneous income:—		
Real estate revenue,		\$3,349 85
Other miscellaneous income,		799 53
Total miscellaneous income,		4,149 38
Total income above expenses,		\$167,465 96
Amount carried forward,		\$167,465 96

¹ Gross earnings from operation in Massachusetts:—

Gross earnings,	. . . . .	\$770,936 65
Less rebates and discounts,	. . . . .	13,789 37
Revenue from operation,		\$757,147 28
Miscellaneous income,		4,004 03
Gross earnings and income,		\$761,151 31

	Items.	Totals.
<i>Amount brought forward,</i>	.	\$167,465 96
Fixed charges:—		
Interest on funded debt,	.	\$10,000 00
Interest on floating debt,	.	92,722 84
Total fixed charges,	.	<u>102,722 84</u>
Surplus of net income above fixed charges,	.	\$64,743 12
Dividends:—		
Dividends declared, $7\frac{1}{2}$ per cent. on \$600,000,	.	\$45,000 00
Less amount of dividend charged to surplus, ¹	.	9,000 00
	<u>36,000 00</u>	
Surplus for year ending June 30, 1909,	.	\$28,743 12

EARNINGS (WHOLE SYSTEM).

Gross earnings from operation:—

Exchange service:—

Subscribers' rentals,	.	\$531,473 99
Pay station local tolls,	.	29,176 75
Terminal charges on long-distance business,	.	6,060 33
Leased line rentals,	.	2,378 13
Miscellaneous exchange earnings,	.	2,296 14
Total exchange service,	.	<u>\$571,385 34</u>

Toll service,

Toll service,	.	208,973 16
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Private line:—

Rental instruments,	.	\$676 21
Miscellaneous earnings,	.	2,215 98
Total private line,	.	<u>2,892 19</u>

Total gross earnings from operation,	.	\$783,250 69
Less rebates and discounts,	.	<u>13,948 89</u>

Revenue from operation,	.	\$769,301 80
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Miscellaneous income:—

Real estate revenue,	.	\$3,349 85
Interest on bank deposits,	.	410 67
Other miscellaneous income,	.	388 86
Total miscellaneous income,	.	<u>4,149 38</u>

Total gross earnings and income,	.	\$773,451 18
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EXPENSES (WHOLE SYSTEM).

General expense:—

Salaries of officers,	.	\$4,805 98
Salaries of others,	.	1,240 48
Wages of clerks,	.	1,770 43
Rent, light and heat,	.	168 93
Travelling,	.	268 39
Postage, printing and stationery,	.	1,148 88
Directory,	.	7,466 24
Taxes,	.	12,474 62
Legal,	.	2,722 20
Damages and compensation,	.	1,629 07
Insurance,	.	18,000 00
Incidental,	.	6,492 51
Total general expense,	.	<u>\$58,187 73</u>

<i>Amount carried forward,</i>	.	\$58,187 73
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¹ See note 2, page 270.

	Items.	Totals.
<i>Amount brought forward,</i>		\$58,187 73
Operating: —		
Superintendence,	\$16,680 24	
Wages of operators,	100,701 57	
Wages of others,	55,388 64	
Rent, light and heat,	14,483 73	
Postage, printing and stationery,	14,394 42	
Advertising and canvassing,	11,449 95	
Incidental,	8,344 01	
Total operating expense,	221,442 56	
Current repair: ¹ —		
Exchange overhead lines,	\$50,807 50	
Exchange underground lines,	3,773 84	
Exchange submarine lines,	265 10	
Central office equipment,	16,473 00	
Subscribers' equipment,	29,212 12	
Toll overhead lines,	6,762 13	
Toll underground lines,	29	
Toll submarine lines,	2 04	
Incidental,	2,817 86	
Supervision,	9,642 10	
Total maintenance expense,	119,755 98	
Instrument rentals: —		
Exchange,	\$25,141 68	
Toll,	9,101 87	
Private line,	145 29	
Total instrument rentals,	34,388 84	
Messenger expense,	684 18	
Conduit, pole and roof rent,	9,100 34	
Rental switchboard equipment,	19,800 00	
Total expenses, not including charges for reconstruction and deferred repairs,	\$463,359 63	
Reconstruction items charged to expense: ¹ —		
Exchange overhead lines,	\$22,239 43	
Exchange underground lines,	2,647 22	
Exchange submarine lines,	332 00	
Central office equipment,	3,065 28	
Subscribers' station equipment,	18,432 01	
Toll overhead lines,	5,344 82	
Toll underground lines,	23 44	
Toll submarine lines,	140 07	
Incidental,	169 86	
Total of reconstruction items charged to expense,	52,394 13	
Deferred maintenance items charged to expense,	90,231 46	
Total of all operating expenses,	\$605,985 22	

¹ See note 1, page 270.

GENERAL BALANCE SHEET.

<i>Assets.</i>	<i>Items.</i>	<i>Totals.</i>
Exchange and toll construction,	\$2,115,250 86
Construction in process,	57,643 17
Other real estate required for operation,	140,679 10
Office furniture and fixtures,	6,262 82
Tools and teams,	24,090 50
Total plant account,	\$2,343,926 45
Securities of other companies,	70 00
Current assets:—		
Cash on hand,	\$73,922 33
Notes and accounts receivable,	136,032 63
Supplies on hand,	59,568 90
Total current assets,	269,523 86
Total debits,	\$2,613,520 31
<i>Liabilities.</i>		
Capital stock, common,	\$600,000 00
Bonded debt,	200,000 00
Current liabilities:—		
Audited vouchers and accounts,	\$1,396,503 90
Matured interest coupons unpaid (including due June 1, 1909),	1,862 50
Total current liabilities,	1,398,366 40
Accrued liabilities:—		
Interest accrued but not due,	\$813 28
Dividends payable July 15, 1909,	9,000 00
Taxes accrued but not due,	5,908 08
Rental charged but not yet accrued,	6,446 29
Other line service,	6,998 09
Directory,	3,456 57
Total accrued liabilities,	32,622 31
Sinking and other special funds:—		
Reserve for fire insurance,	\$26,198 19
Reserve for uncollectible accounts,	37,955 29
Reserve for deferred maintenance,	209,963 49
Reserve for accident insurance,	1,948 30
Total sinking and other special funds,	276,065 27
Total liabilities,	\$2,507,053 98
Balance, surplus,	106,466 33
Total credits,	\$2,613,520 31
PROFIT AND LOSS ACCOUNT.	Dr.	Cr.
Balance from previous year,	\$86,723 21
Gross earnings from operation,	783,250 69
Miscellaneous income,	799 53
Real estate revenue,	3,349 85
Operating expenses, including charges on account of reconstruction and deferred repairs,	\$598,311 82
Rebates and discounts,	13,948 89
<i>Amounts carried forward,</i>	\$612,260 71 \$874,123 28

	Dr.	Cr.
<i>Amounts brought forward,</i>	\$612,260 71	\$874,123 28
Interest on funded debt,	10,000 00	
Interest on floating debt,	92,722 84	
For depreciation of material in stock at the supply department,	7,673 40	
Dividends declared on stock, 6 per cent.,	36,000 00	
Dividends declared on stock, 1½ per cent., due July 15, 1909,	9,000 00	
Balance, surplus,	106,466 33	
	<hr/> \$874,123 28	<hr/> \$874,123 28

PROPERTY ACCOUNTS (ADDITIONS DURING THE YEAR).

	Items.	Totals.
Exchange construction:—		
Right of way,	\$5,979 78	
Overhead lines,	43,321 53	
Underground lines,	16,717 14	
Submarine lines,	481 77	
Central office equipment,	11,431 91	
Subscribers' station equipment,	31,331 14	
Total exchange construction and equipment,	<hr/> 109,263 27	
Toll construction:—		
Right of way,	\$8 48	
Overhead lines,	264 85	
Underground lines,	291 40	
Submarine lines,	111 52	
Total toll construction,	<hr/> 676 25	
Construction in process,	48,191 20	
Office furniture and fixtures,	1,764 53	
Tools and teams,	4,586 79	
Net additions to property account for the year,	<hr/> 164,482 04	

STATISTICAL INFORMATION.

	In Massachusetts.	Outside Massachusetts.	Whole System.
Number of subscribers,	22,350	278	22,628
Number of stations,	23,233	294	23,527
Number of operators,	285.5	—	285.5
Number of pay stations,	883	16	899
Number of subscribers on party lines,	20,049	275	20,324
Number of subscribers on single lines,	2,301	3	2,304
Underground system:—			
Conduit, feet,	310,824	—	310,824
Duct, feet, ¹	1,372,549	—	1,372,549
Cable, feet,	441,131	—	441,131
Wire, miles,	20,188	—	20,188
Submarine system:—			
Cable, feet,	22,493	7,298	29,791
Wire, miles,	117	66	183
Overhead system:—			
Pole line, miles,	1,670	59	1,729
Iron wire, miles,	9,759	453	10,212
Copper wire, miles,	15,377	121	15,498

¹ Does not include underground connections.

GENERAL REMARKS AND EXPLANATIONS.

1. "Separation of current repair and of reconstruction has been made as accurately as it has been found possible to make it, but no practical way has been found to properly divide such expenses on pole lines which carry both toll and exchange wires, cables that carry both toll and exchange circuits, switchboards that are used for both toll and exchange connections, wires which at varying times may be used for either toll or exchange purposes, underground conduits which carry both exchange and toll cables, or other portions of the plant that serve partly for exchange and partly for toll purposes. Consequently and unavoidably the figures here given showing separation between current repair and reconstruction must be considered inaccurate."

reconstruction must be considered inaccurate.

2. "One dividend, which would have been declared in January if the practice of previous year had been followed, was declared in December for the purpose of making the dividend year conform with the fiscal year of the company, and an amount equal to the first dividend declared in 1908 was charged against the surplus account."

NONOPERATING AND SMALL TELEPHONE COMPANIES.

BEECHMONT INDEPENDENT TELEPHONE COMPANY.

Location of principal business office: East Windsor, Mass.

Date of organization: January, 1906.

Date of annual meeting: the last Saturday in June.

Date when company began to give service: February, 1906.

Service is given by this company over its own lines in the towns of Cummington, Peru and Windsor.

GENERAL OFFICERS AND OFFICIAL TITLES.

Oscar D. Jacobs, President.
William R. Pierce, Treasurer and Manager.
Florice B. Pierce, Secretary.

CAPITAL

Capital paid in,	\$500 00
Number of stockholders,	8
Number of stockholders admitted,	8

Electrode E₁ was placed at the top of the

EARNINGS AND EXPENSES.	
Gross earnings,	\$80 00
Expenses	15 05

Net earnings,	\$64 95
Surplus balance from last year.	121 00

Surplus, June 30, 1909, \$185 95

GENERAL BALANCE SHEET.

Assets

Property accounts,	\$500 00
Notes and accounts receivable,	172 00
Supplies on hand,	28 00
Total debits,	\$700 00

STATISTICAL INFORMATION.

BERNARDSTON AND GILL TELEPHONE COMPANY.

Location of principal business office: Bernardston, Mass.

Date when company began to give service: Feb. 1, 1903.

Service is given by this company over its own lines in the towns of Bernardston, Gill and Leyden.

GENERAL OFFICERS

A. H. and C. R. Nelson, Managers.

CAPITAL

CAPITAL. \$4,000.00

EARNINGS AND EXPENSES

EARNINGS AND EXPENSES.						
Gross earnings,	.	.	.	.	.	\$2,004 24
Expenses,	.	.	.	.	.	777 12

Net earnings, \$1,227 12

GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$4,000 00
Accounts receivable,	250 00
Supplies on hand,	10 00
 Total debits	 \$4,260 00

Lägghålltare

Liabilities.	
Capital stock,	\$4,000 00
Surplus,	260 00
Total credits,	\$4,260 00

STATISTICAL INFORMATION.

Number of subscribers,	.	.	.	.	.	.	.	111
Number of instruments,	.	.	.	.	.	.	.	115
Number of operators,	.	.	.	.	.	.	.	3
Number of pay stations,	.	.	.	.	.	.	.	4
Number of subscribers on party lines,	.	.	.	.	.	.	.	111
Overhead system:—								
Pole line, miles,	.	.	.	.	.	.	.	43
Iron wire, miles,	.	.	.	.	.	.	.	115

NOTE.—“Tolls went to operators for their fees, let it be whatever it is, probably amounting to about \$25 per month to them. A record is kept by the New England Telephone and Telegraph Company of the tolls, and must be returned by them.”

THE BOLTON TELEPHONE COMPANY.

Location of principal business office: Bolton, Mass.

Date of organization: January, 1906.

Date of incorporation: January, 1906.

State in which incorporated: Massachusetts.

Date of annual meeting: January 15.

Date when company began to give service: January, 1906.

Service is given by this company over its own lines in the town of Bolton.

GENERAL OFFICERS AND OFFICIAL TITLES.

Edward D. Emerson, President.
Franklin J. Hamblin, Treasurer.

DIRECTORS AND RESIDENCES

DIRECTIONS AND RESIDENCES.						
Edward D. Emerson,	.	.	.	.	.	Bolton, Mass.
William E. Litchfield,	.	.	.	.	.	Newton, Mass.
Franklin J. Hamblin,	.	.	.	.	.	Bolton, Mass.

CAPITAL

Capital paid in. \$1,500 00

Number of stockholders resident in Massachusetts 25

DEBTS.

Amount of notes outstanding. \$400 00

EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

<i>Assets.</i>							
Property accounts,							\$1,931 69
Notes and accounts receivable,							53 58
Cash on hand,							347 41
Reserve fund,							334 10
<hr/>							
Total debits,							\$2,666 78
<i>Liabilities.</i>							
Capital stock,							\$1,500 00
Notes payable,							400 00
Accounts payable,							56 95
Other liabilities,							6 47
Surplus,							703 36
<hr/>							
Total credits,							\$2,666 78
STATISTICAL INFORMATION.							
Number of subscribers,							52
Number of instruments,							54
Number of operators,							1
Number of pay stations,							1
Number of subscribers on party lines,							52
Overhead system:—							
Pole line, miles,							20.5
Iron wire, miles,							49
<hr/>							

CHELMSFORD TELEPHONE COMPANY.

Location of principal business office: Chelmsford, Mass.

Date of organization: Dec. 23, 1903.

Date of annual meeting; first Monday in January.

Date when company began to give service: Jan. 4, 1904.

Service is given by this company over its own lines in the town of Chelmsford.

GENERAL OFFICERS AND OFFICIAL TITLES.

Joseph E. Warren,	President.
Eben T. Adams,	Clerk and Treasurer.

CAPITAL.

Capital paid in,	\$500 00
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EARNINGS AND EXPENSES.

Gross earnings,	\$158 07
Expenses,	157 54

Net earnings,	\$0 53
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GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$500 00
Supplies on hand,	10 00

Cash on hand,	35 76
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Total debits,	\$545 76
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STATISTICAL INFORMATION.

COLUMBIA AND RENSSELAER TELEPHONE AND TELEGRAPH
COMPANY.

Location of principal business office: West Lebanon, N. Y.

Date of organization: March, 1894.

Date of incorporation: March, 1894.

State in which incorporated: New York.

Date of annual meeting: July 5.

Date when company began to give service: March, 1894.

Service is given by this company over its own lines in the town of Hancock, Mass., and in the State of New York.

GENERAL OFFICERS AND OFFICIAL TITLES.

Abner S. Haight, President.
Warren Fowler, Vice-President and General Manager.
Mary J. Fowler, Secretary and Treasurer.

DIRECTORS AND RESIDENCES.

Abner S. Haight,	.	.	.	61 Worth Street, New York, N. Y.
Warren Fowler,	.	.	.	West Lebanon, N. Y.
Harriet E. Haight,	.	.	.	61 Worth Street, New York, N. Y.
Mary J. Fowler,	.	.	.	West Lebanon, N. Y.
Frederick E. Haight,	.	.	.	61 Worth Street, New York, N. Y.
Austin D. Haight,	.	.	.	New Lebanon Center, N. Y.
May F. Fowler,	.	.	.	West Lebanon, N. Y.

CAPITAL.

Capital paid in, \$1,000 00
Number of stockholders, 7
Number of stockholders resident in Massachusetts None

D-1

Amount of notes outstanding **DEBTS.** \$2,500,000

EARNINGS AND EXPENSES.

Gross earnings:								\$12,194	35
Expenses,								6,724	60
Net earnings,								\$5,469	75
Interest payments,								225	73
Net profit,								\$5,244	02
Surplus balance from last year,								20,406	32
Surplus June 30, 1909,								\$25,650	34

GENERAL BALANCE SHEET.

Assets.

Property accounts,								\$28,565	85
Notes and accounts receivable,								1,297	95
Cash on hand,								599	54
Total debits,								\$30,463	34

Liabilities.

Capital stock,								\$1,000	00
Notes payable,								2,500	00
Accounts payable,								1,313	00
Balance, surplus,								25,650	34

Total credits, \$30,463 34

STATISTICAL INFORMATION.

Number of subscribers,								628	
Number of instruments,								654	
Number of operators,								10	
Number of pay stations,								10	
Number of subscribers on party lines,								625	
Number of subscribers on single lines,								3	
Overhead system:—									
Pole line, miles,								120	
Iron wire, miles,								650	

NOTE.—“ We have no poles in Massachusetts. One circuit on poles of other lines, about one mile in length, with one subscriber. We have fourteen instruments connected to lines owned by farmers, which includes everything we have in Massachusetts. Entire gross income from Massachusetts for year ending June 30, 1909, is less than \$200.”

CRESCENT TELEPHONE COMPANY.

Location of principal business office: New Salem, Mass.

Date of organization: October, 1902.

Date when company began to give service: October, 1902.

Service is given by this company over its own lines in the towns of Orange and New Salem.

GENERAL OFFICER.

Levi Wallace Flagg, Owner.

CAPITAL.

Capital paid in, at par, in cash, by the subscribers, \$1,200.00

EARNINGS AND EXPENSES.

Net earnings, \$122 00
 Dividends, 122 00

GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$900 00
Notes and accounts receivable,	48 00
Supplies on hand,	25 00
Balance, deficit,	227 00

Total debits, \$1,200 00

Liabilities.

Capital stock, \$1,200 00

Total credits, \$1,200 00

STATISTICAL INFORMATION.

Number of subscribers,	19
Number of instruments,	22
Number of subscribers on party lines,	19
Overhead system:—	
Pole line, miles,	13
Iron wire, miles,	26

THE FARMERS MUTUAL TELEPHONE COMPANY OF BRISTOL COUNTY.

Location of principal business office: Norton, Mass.

Date of organization: Sept. 5, 1902.

Date of incorporation: Sept. 2, 1902.

State in which incorporated: Massachusetts.

Date of annual meeting: second Tuesday in May.

Date when company began to give service: previous to January, 1903.

Service is given by this company over its own lines in Norton, Mass.

GENERAL OFFICERS AND OFFICIAL TITLES.

Arthur M. Round, President.
Charles B. Caswell, Clerk and Treasurer.
Frank A. Clapp, Superintendent.

DIRECTORS AND RESIDENCES.

Arthur M. Round,	.	.	.	.	.	.	Norton, Mass.
Samuel V. Cole,	.	.	.	.	.	.	Norton, Mass.
Frank A. Clapp,	.	.	.	.	.	.	Norton, Mass.
Charles G. Clapp,	.	.	.	.	.	.	Norton, Mass.
Homer L. Lane,	.	.	.	.	.	.	Norton, Mass.

CAPITAL.

Capital paid in,	.	.	.	.	.	.	\$1,100 00
Number of stockholders,	.	.	.	.	.	.	13
Number of stockholders resident in Massachusetts,	13

DEBTS.

Amount of notes outstanding,	\$125 00
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EARNINGS AND EXPENSES.

Gross earnings,	\$132 00
Expenses,	79 66
<hr/>							
Net earnings,	\$52 34

GENERAL BALANCE SHEET.

Assets.

Property accounts,	.	.	.	.	.	.	\$1,324 00
Cash on hand,	.	.	.	.	.	.	24 83
<hr/>							
Total debits,	.	.	.	.	.	.	\$1,348 83

Liabilities.

Capital stock,	.	.	.	.	.	.	\$1,100 00
Notes payable,	.	.	.	.	.	.	125 00
Other liabilities,	.	.	.	.	.	.	49 49
Balance, surplus,	.	.	.	.	.	.	74 34
<hr/>							
Total credits,	.	.	.	.	.	.	\$1,348 83

STATISTICAL INFORMATION.

Number of subscribers,	.	.	.	.	.	.	.	16
Number of instruments,	.	.	.	.	.	.	.	22
Number of subscribers on party lines,	.	.	.	.	.	.	.	14
Number of subscribers on single lines,	.	.	.	.	.	.	.	2
Overhead system:—								
Pole line, miles,	.	.	.	.	.	.	.	6
Iron wire, miles,	.	.	.	.	.	.	.	6

GRANBY TELEPHONE AND TELEGRAPH COMPANY.

Location of principal business office: Granby, Mass.

Date of organization: February, 1903.

Date of incorporation: February, 1903.

State in which incorporated: Massachusetts.

Date of annual meeting: third Monday of January.

Date when company began to give service: May, 1903.

Service is given by this company over its own lines in the towns of Granby and Ludlow.

GENERAL OFFICERS AND OFFICIAL TITLES.

George R. Smith, President.
W. F. Forward, Manager.
W. A. Taylor, Secretary and Treasurer.
H. H. Moody, Auditor.

DIRECTORS AND RESIDENCES.

H. H. Moody, .	.	.	.	.	.	.	Granby, Mass.
D. C. Nutting, .	.	.	.	.	.	.	Granby, Mass.
George R. Smith, .	.	.	.	.	.	.	Granby, Mass.
George F. Bell, .	.	.	.	.	.	.	Granby, Mass.
A. T. Warner, .	.	.	.	.	.	.	Granby, Mass.
H. S. Taylor, .	.	.	.	.	.	.	Granby, Mass.
W. F. Forward, .	.	.	.	.	.	.	Granby, Mass.

CAPITAL.

Capital paid in,	\$1,200 00
Number of stockholders,	34
Number of stockholders resident in Massachusetts,	33
Amount of stock held in Massachusetts,	\$1,100 00

EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

Assets

Property accounts,	\$1,200 00
Notes and accounts receivable,	76 50
Balance, deficit,	64 29
Total debits	\$1,340 79

Liabilities

STATISTICAL INFORMATION.

Number of subscribers,	.	.	.	.	.	.	.	.	53
Number of instruments,	.	.	.	.	.	.	.	.	53
Number of operators,	.	.	.	.	.	.	.	.	1
Number of pay stations,	.	.	.	.	.	.	.	.	1
Number of subscribers on party lines,	.	.	.	.	.	.	.	.	53
Overhead system:—									
Pole line, miles,	.	.	.	.	.	.	.	.	14
Iron wire, miles,	.	.	.	.	.	.	.	.	28

HAMPDEN AUTOMATIC TELEPHONE COMPANY.

Location of principal business office: 307 Main Street, Springfield, Mass.
 Date of organization: Feb. 3, 1900.
 Date of incorporation: Feb. 8, 1900.
 State in which incorporated: Massachusetts.
 Date of annual meeting: first Tuesday in April.

GENERAL OFFICERS AND OFFICIAL TITLES.

Charles H. Churchill,	.	.	.	.	.	.	President.
William E. Wright,	.	.	.	.	.	.	Vice-President.
Samuel D. Sherwood,	.	.	.	.	.	.	Treasurer.
Edward W. Beattie, Jr.,	.	.	.	.	.	.	Auditor.
Fred A. Delabarre,	.	.	.	.	.	.	Clerk.

DIRECTORS AND RESIDENCES.

Charles H. Churchill,	.	.	.	.	.	.	Springfield, Mass.
Samuel D. Sherwood,	.	.	.	.	.	.	Springfield, Mass.
Orlando M. Baker,	.	.	.	.	.	.	Springfield, Mass.
Daniel E. Leary,	.	.	.	.	.	.	Springfield, Mass.
William E. Wright,	.	.	.	.	.	.	Springfield, Mass.
William G. McKechnie,	.	.	.	.	.	.	Springfield, Mass.
Joseph T. Herrick,	.	.	.	.	.	.	Springfield, Mass.
Fred A. Delabarre,	.	.	.	.	.	.	Conway, Mass.

CAPITAL.

Capital paid in,	.	.	.	.	.	.	\$7,480 00
Number of stockholders,	.	.	.	.	.	.	11
Number of stockholders resident in Massachusetts,	.	.	.	.	.	.	11

GENERAL BALANCE SHEET.

<i>Assets.</i>							
Property accounts,	.	.	.	.	.	.	\$7,174 33
Cash on hand,	.	.	.	.	.	.	305 67
Total debits,	.	.	.	.	.	.	\$7,480 00
<i>Liabilities.</i>							
Capital stock,	.	.	.	.	.	.	\$7,480 00
Total credits,	.	.	.	.	.	.	\$7,480 00

NOTE.—This is not an operating company.

HEATH LOCAL TELEPHONE ASSOCIATION.

Location of principal business office: North Heath, Mass.

Date of organization: Nov. 1, 1906.

Date when company began to give service: Nov. 1, 1906.

Service is given by this company over its own lines in the town of Heath.

GENERAL OFFICERS AND OFFICIAL TITLES.

Isaac W. Stetson,	President and General Manager.
Clifford J. Hager,	Clerk and Treasurer.

DIRECTORS AND RESIDENCES.

Isaac W. Stetson,	North Heath, Mass.
Clifford J. Hager,	Dell, Mass.
Levi Lively,	Dell, Mass.
Fred Stone,	Cyrus, Mass.

CAPITAL.

Capital paid in,	\$S10 00
Number of stockholders,	10
Number of stockholders resident in Massachusetts,	10

EARNINGS AND EXPENSES.

Gross earnings:—	
Exchange service,	\$576 00
Toll service,	23 30
<hr/>	
Total gross earnings,	\$599 30
Expenses,	592 44
<hr/>	
Net earnings,	\$6 86
Dividends,	47 70
<hr/>	
Deficit for the year,	\$40 84

GENERAL BALANCE SHEET.

<i>Assets.</i>	
Property accounts,	\$1,100 00
Notes and accounts receivable,	83 47
Supplies on hand,	25 00
Cash on hand,	15 50
<hr/>	
Total debits,	\$1,223 97
 <i>Liabilities.</i>	
Capital stock,	\$810 00
Accounts payable,	186 79
Balance, surplus,	227 18
<hr/>	
Total credits,	\$1,223 97

STATISTICAL INFORMATION.

Number of subscribers,	72
Number of instruments,	75
Number of operators,	2
Number of pay stations,	4
Number of subscribers on party lines,	72
Overhead system:—	
Pole line, miles,	21
Iron wire, miles,	56

NOTE.—“Free service was to be given to all of our subscribers to the Heath Telephone Company, when we purchased the territory of them, for like service to us in the town of Charlemont, Mass.”

THE HIGHLAND TELEPHONE COMPANY.

Location of principal business office: Cooleyville, Mass.

Date of organization: May 22, 1907.

Date of incorporation: Aug. 9, 1907.

State in which incorporated: Massachusetts.

Date of annual meeting: first Monday in May.

Date when company began to give service: Sept. 1, 1901.

Service is given by this company over its own lines in the towns of Leverett, New Salem, Prescott and Shutesbury.

GENERAL OFFICES AND OFFICIAL TITLES.

Willard Putnam, President.
Rawson King, Secretary and Treasurer.

DIRECTORS AND RESIDENCES.

Willard Putnam, Cooleyville, Mass.
Rawson King, Cooleyville, Mass.
Martha E. King, Cooleyville, Mass.

CAPITAL.

Capital paid in. \$5,000 00

Number of stockholders. 4

Number of stockholders resident in Massachusetts. 4

DEBTS.

Amount of notes outstanding. \$500,000

EARNINGS AND EXPENSES

Gross earnings: — EARNINGS AND EXPENSES.

Total gross earnings, \$2,449 62
 Expenses. 1,189 29

Expenses, \$1,150 20

Net earnings, \$1,260 33

GENERAL BALANCE SHEET.

<i>Assets</i>	
Property accounts,	\$5,800 00
Notes and accounts receivable,	450 00
Supplies on hand,	50 00
Cash on hand,	53 46
<hr/>	
Total debits,	\$6,353 46
 <i>Liabilities.</i>	
Capital stock,	\$5,000 00
Notes payable,	800 00
Balance, surplus,	553 46
<hr/>	
Total credits,	\$6,353 46

STATISTICAL INFORMATION.

Number of subscribers,	140
Number of instruments,	150
Number of operators,	1
Number of subscribers on party lines,	140
Overhead system:—	
Pole line, miles,	50
Iron wire, miles,	200

NOTE.—“We are obliged to estimate notes and accounts receivable.”

LITTLETON TELEPHONE ASSOCIATION.

Location of principal business office: Littleton, Mass.

Date of organization: April 18, 1904.

Date of annual meeting: first Monday in April.

Date when company began to give service: about Oct. 1, 1904.

Service is given by this company over its own lines in the towns of Harvard, Littleton and Westford.

GENERAL OFFICERS AND OFFICIAL TITLES.

Frank B. Priest,	President.
J. Melvin Hartwell,	Treasurer.

CAPITAL.

Capital paid in,	\$1,350 00
Number of stockholders,	58
Number of stockholders resident in Massachusetts,	58

EARNINGS AND EXPENSES.

Gross earnings:—	
Exchange service,	\$552 00
Miscellaneous earnings,	75 00
<hr/>	
Total gross earnings,	\$627 00
Expenses,	500 85
<hr/>	
Net earnings,	\$126 15

GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$1,350 00
Notes and accounts receivable,	145 96
Supplies on hand,	26 00
Cash on hand,	60 65
Total debits,	\$1,582 61

Liabilities.

Capital stock,	\$1,350 00
Accounts payable,	211 30
Balance, surplus,	21 31
Total credits,	\$1,582 61

STATISTICAL INFORMATION.

Number of subscribers,	59
Number of instruments,	55
Number of subscribers on party lines,	59
Overhead system:—	
Pole line, miles,	21
Iron wire, miles,	42

NANTUCKET TELEPHONE COMPANY.

Location of principal business office: 26 Pine Street, Nantucket, Mass.

Date of re-organization: May 28, 1896.

Date of incorporation: July 29, 1896.

State in which incorporated: Massachusetts.

Date of annual meeting: first Tuesday in April.

Date when company began to give service: April 18, 1895.

GENERAL OFFICER.

William T. Devlan, *President and Treasurer.*

DIRECTORS AND RESIDENCES.

William T. Devlan,	Nantucket, Mass.
Charles H. Robinson,	Nantucket, Mass.
John S. Grouard,	Nantucket, Mass.
Isaac Hills,	Nantucket, Mass.
Robert K. Appleton,	Nantucket, Mass.

CAPITAL.

Capital paid in,	\$2,500 00
Number of stockholders,	42
Number of stockholders resident in Massachusetts,	42

NOTE.—This company has not operated for several years and has no property except franchise.

THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY OF
MASSACHUSETTS.

Location of principal business office: 119 Milk Street, Boston, Mass.

Date of organization: May 17, 1888.

Date of incorporation: May 17, 1888.

State in which incorporated: Massachusetts.

Date of annual meeting: first Wednesday in April.

GENERAL OFFICERS AND OFFICIAL TITLES.

Jasper N. Keller,	.	.	.	.	.	<i>President.</i>
Francis A. Houston,	.	.	.	.	.	<i>General Manager.</i>
Edmund S. Willard,	.	.	.	.	.	<i>Treasurer.</i>
Edward A. Wilkie,	.	.	.	.	.	<i>Clerk.</i>
William J. Denver,	.	.	.	.	.	<i>Assistant General Manager.</i>
Edmund W. Longley,	.	.	.	.	.	<i>Auditor.</i>
Carl T. Keller,	.	.	.	.	.	<i>Assistant General Manager.</i>

DIRECTORS AND RESIDENCES.

Jasper N. Keller,	.	.	.	.	.	Surry, N. H.
William J. Denver,	.	.	.	.	.	Roxbury, Mass.
Francis A. Houston,	.	.	.	.	.	Concord, Mass.
Edmund W. Longley,	.	.	.	.	.	Salem, Mass.

CAPITAL.

Capital authorized by certificate of association,	.	.	.	.	\$25,000 00
Capital authorized by vote of company,	.	.	.	.	25,000 00
Capital paid in, 250 shares; par value, \$100,	.	.	.	.	25,000 00
Whole number of stockholders,	.	.	.	.	5
Number of stockholders resident in Massachusetts,	.	.	.	.	3
Amount of stock held in Massachusetts (shares),	.	.	.	.	15
Amount of stock held by parent telephone company (shares),	.	.	.	.	230

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
May 18, 1889,	Demand,	Real estate mortgage,	4	\$10,000 00
Dec. 31, 1908,	Demand,	-	6	418,399 28
Total amount of bonds and notes,				\$428,399 28
Capital paid in,				25,000 00
Total liability for capital and loans,				\$453,399 28

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

Miscellaneous income:—

Real estate revenue,	\$30,137 25
General expense, salaries of officers,	2,000 04
<hr/>	
Total income above expenses,	\$28,137 21
Fixed charges:—	
Interest on floating debt,	25,569 81
<hr/>	
Surplus for the year	\$2,567 40

GENERAL BALANCE SHEET.

Assets.	Items.	Totals.
Exchange and toll construction, . . . . .	. . . . .	\$33,000 00
Investment real estate not required for operation, . . . . .	. . . . .	493,474 31
<hr/>		
Total plant account, . . . . .	. . . . .	\$526,474 31
Current assets:—		
Cash on hand,	\$457 71	
Notes and accounts receivable,	496 55	
Total current assets,	<hr/> 954 26	
<hr/>		
Total debits, . . . . .	. . . . .	\$527,428 57
 <i>Liabilities.</i>		
Capital stock, common, . . . . .	. . . . .	\$25,000 00
Real estate mortgages, . . . . .	. . . . .	10,000 00
Current liabilities:—		
Loans and notes payable, . . . . .	. . . . .	451,399 28
Accrued liabilities:—		
Interest accrued but not due, . . . . .	. . . . .	233 33
<hr/>		
Total liabilities, . . . . .	. . . . .	\$486,632 61
Balance, surplus, . . . . .	. . . . .	40,795 96
<hr/>		
Total credits, . . . . .	. . . . .	\$527,428 57

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year, . . . . .	. . . . .	\$38,228 56
Real estate revenue, . . . . .	. . . . .	30,137 25
Operating expenses,	\$2,000 04	
Interest on floating debt, . . . . .	. . . . .	25,569 81
Balance, surplus, . . . . .	. . . . .	40,795 96
<hr/>		
	\$68,365 81	\$68,365 81

PROPERTY ACCOUNTS (ADDITIONS DURING THE YEAR).

Real estate not required for operation,	\$1,071 91
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NOTE.— This is not an operating company.

NORTHFIELD FARMS TELEPHONE COMPANY.

Location of principal business office: Northfield Farms, Mass.

Date when company began to give service: 1902.

Service is given by this company over its own lines in the town of Northfield.

GENERAL OFFICER.

Osgood L. Leach,	<i>Manager</i>
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CAPITAL.

Capital paid in,	\$300 00
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Number of stockholders,	2
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Number of stockholders resident in Massachusetts,	2
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EARNINGS AND EXPENSES.

Gross earnings,	\$375 92
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Expenses,	241 05
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Net earnings,	\$134 87
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GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$300 00
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Liabilities.

Capital stock,	\$300 00
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STATISTICAL INFORMATION.

Number of subscribers,	24
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Number of instruments,	25
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Number of pay stations,	1
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Number of subscribers on party lines,	24
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Overhead system:—

Pole line, miles,	7
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Iron wire, miles,	7
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NORTH ORANGE TELEPHONE COMPANY.

Location of principal business office: North Orange, Mass.

Date of organization: April 29, 1902.

Date when company began to give service: about June 1, 1902.

Service is given by this company over its own lines in the town of Orange.

GENERAL OFFICER.

H. W. Gilmore,	<i>General Manager.</i>
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EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

Assets.

Property accounts, \$500 00

Liabilities.

Capital stock, \$500 00

STATISTICAL INFORMATION.

Number of subscribers,	46
Number of instruments,	46
Number of operators,	1
Number of subscribers on party lines,	46
Overhead system: —	
Pole line, miles,	10
Iron wire, miles,	10

NOTE.— "This company is composed of farmers, who built the lines for their own convenience, and is repaired and supported by the owners. It is composed of five lines, each having its own president and other officers; the repairs of the lines being done by the farmers themselves; the boxes and inside work being done by the manager or by one of the New England Telephone and Telegraph Company men, who is paid from the income from the tolls coming over the New England Telephone and Telegraph Company line connected at North Orange store with the other lines of the farmers. The boxes are hired from the New England Telephone and Telegraph Company."

OAKHAM AND COLDBROOK SPRINGS TELEPHONE COMPANY.

Location of principal business office: Oakham, Mass.

Date of organization: June 1, 1893.

Date when company began to give service: July 16, 1903.

Service is given by this company over its own lines in the towns of Barre and Oakham.

GENERAL OFFICERS.

CAPITAL

CAPITAL. \$1,500,311

DEBTS.						
Amount of notes outstanding,						400 00
EARNINGS AND EXPENSES.						
Gross earnings:—						
Exchange service,						\$834 65
Toll service,						187 85
Miscellaneous earnings,						39 22
<hr/>						
Total gross earnings,						\$1,061 72
Expenses,						913 34
<hr/>						
Net earnings,						\$148 38
Interest payments,						12 00
<hr/>						
Net profit,						\$136 38
Miscellaneous charges,						38 25
<hr/>						
Surplus, June 30, 1909,						\$98 13
GENERAL BALANCE SHEET.						
Assets.						
Property accounts,						\$2,017 79
Notes and accounts receivable,						69 46
Supplies on hand,						40 50
Cash on hand,						39 33
Other assets,						45 00
<hr/>						
Total debits,						\$2,212 08
Liabilities.						
Capital stock,						\$1,500 31
Notes payable,						400 00
Accounts payable,						311 77
<hr/>						
Total credits,						\$2,212 08
STATISTICAL INFORMATION.						
Number of subscribers,						60
Number of instruments,						65
Number of operators,						3
Number of pay stations,						5
Number of subscribers on party lines,						56
Number of subscribers on single lines,						4
Overhead system:—						
Pole line, miles,						25
Iron wire, miles,						74
Copper wire, miles,						2

ORLEANS TELEPHONE COMPANY.

Location of principal business office: Orleans, Mass.

Date when company began to give service: April, 1901.

Service is given by this company over its own lines in the town of Orleans.

GENERAL OFFICER.

Henry K. Cummings, Owner and
Manager.

EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

Assets

Property accounts,	\$400 00
Supplies on hand,	45 00
Balance, deficit,	138 00
Total debits,	\$583 00

Liabilities.

Capital stock,	\$583 00
Total credits	\$583 00

STATISTICAL INFORMATION

Number of subscribers,	13
Number of instruments,	15
Number of subscribers on party lines,	13
Overhead system:—	
Pole line, miles,	6.5
Iron wire, miles,	6.5

E. M. PARTRIDGE,

Location of principal business office: Millers Falls, Mass.

Date when service first given: June 1, 1899.

Date when service first given: June 1, 1883.
Service is given by this concern over its own lines in the towns of Erving and Montague.

GENERAL OFFICER.

E. M. Partridge, Owner.

EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

Assets.

<i>Assets.</i>	
Property accounts,	\$936 50
Notes and accounts receivable,	278 53
Supplies on hand,	35 00
Cash on hand,	136 66
 Total debits,	 \$1,386 69
 <i>Liabilities.</i>	
Capital stock,	\$936 50
Accounts payable,	65 44
Balance, surplus,	384 75
 Total credits,	 \$1,386 69

STATISTICAL INFORMATION.

	SIX MONTHS INVESTIGATION.
Number of subscribers,	66
Number of instruments,	71
Number of pay stations,	4
Number of subscribers on party lines,	65
Number of subscribers on single lines,	1
Overhead system:—	
Pole line, miles,	$\frac{1}{2}$
Iron wire, miles,	15

RICHMOND TELEPHONE COMPANY.

Location of principal business office: Richmond, Mass.

Date of organization: Sept. 29, 1903.

Date of incorporation: Sept. 29, 1903.

State in which incorporated: Massachusetts.

Date of annual meeting: first Friday after July 1.

Date when company began to give service: 1903.

Service is given by this company over its own lines in the town of Richmond.

GENERAL OFFICERS AND OFFICIAL TITLES.

Frederick A. Clement,	.	.	.	.	.	<i>President and General Manager.</i>
Sydney M. Loveland,	.	.	.	.	.	<i>Vice-President.</i>
John R. Ayer,	.	.	.	.	.	<i>Clerk and Treasurer.</i>

DIRECTORS AND RESIDENCES.

Frederick A. Clement,	.	.	.	.	.	.	Richmond, Mass.
Sydney M. Loveland,	.	.	.	.	.	.	Richmond, Mass.
Charles H. Nichols,	.	.	.	.	.	.	Richmond, Mass.
Amos G. Kiltz,	.	.	.	.	.	.	Richmond, Mass.
James H. Barnes,	.	.	.	.	.	.	Richmond, Mass.

CAPITAL.

Capital paid in,	\$1,610 00
Number of stockholders,	20
Number of stockholders resident in Massachusetts,	17
Amount of stock held in Massachusetts (shares).	19

DEBTS

Amount of notes outstanding. **DEBITS.** **\$500.00**

EARNINGS AND EXPENSES.

GENERAL BALANCE SHEET.

Assets

Property accounts,	\$3,100 00
Notes and accounts receivable,	268 13
Supplies on hand,	209 37
Cash on hand,	53 24
 Total debits,	 \$3,630 74

Liabilities.

Capital stock,	\$1,610 00
Notes payable,	500 00
Accounts payable,	280 00
Balance, surplus,	1,240 74
 Total credits,	 \$3,630 74

STATISTICAL INFORMATION.

Number of subscribers,	47
Number of instruments,	52
Number of operators,	2
Number of pay stations,	2
Number of subscribers on party lines,	45
Number of subscribers on single lines,	2
Overhead system:—	
Pole line, miles,	17
Iron wire, miles,	53.5
Copper wire, miles,	2 $\frac{2}{3}$

NOTE.—“We have added no pole line this year, but have added 1 $\frac{1}{2}$ miles of iron metallic circuit to our iron wire.”

ROWLEY TELEPHONE COMPANY.

Location of principal business office: Rowley, Mass.

Date when company began to give service: Dec. 15, 1898.

Service is given by this company over its own lines in the towns of Ipswich and Rowley.

GENERAL OFFICERS.

Almon E. Carpenter and Albert E. Bailey, Owners.

CAPITAL.

Capital paid in,	\$1,545 70
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DEBTS.

Amount of notes outstanding,	\$1,600 00
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EARNINGS AND EXPENSES.

Gross earnings:—

Exchange service,	\$663 69
Toll service,	254 91

Total gross earnings,	\$918 60
Expenses,	6S3 02

Net earnings,	\$235 58
Interest payments,	96 00

Net profit,	\$139 58
Dividends,	372 98

Deficit for the year,	\$233 40
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GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$2,358 93
Notes and accounts receivable,	555 72
Supplies on hand,	99 25
Cash on hand,	43 19
Balancee, deficit,	88 58

Total debits,	\$3,145 67
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Liabilities.

Capital stock,	\$1,545 67
Notes payable,	1,600 00
Total credits,	\$3,145 67

STATISTICAL INFORMATION.

Number of subscribers, . . . . .	. . . . .	47
Number of instruments, . . . . .	. . . . .	47
Number of operators, . . . . .	. . . . .	1
Number of pay stations, . . . . .	. . . . .	4
Number of subscribers on party lines, . . . . .	. . . . .	45
Number of subscribers on single lines, . . . . .	. . . . .	2
Overhead system:—		
Pole line, miles, . . . . .	. . . . .	10
Iron wire, miles, . . . . .	. . . . .	26

STATE LINE CO-OPERATIVE TELEPHONE COMPANY NO. 7.

Location of principal business office: West Stockbridge, Mass.

Date of organization: Jan. 1, 1902.

Date when company began to give service: Jan. 1, 1902.

Service is given by this company over its own lines in the town of West Stockbridge, Mass., and in the State of New York.

GENERAL OFFICERS AND OFFICIAL TITLES.

John Howes, . . . . .	. . . . .	President.
John P. Smith, . . . . .	. . . . .	Treasurer.
Charles H. Baldwin, . . . . .	. . . . .	Secretary.

CAPITAL.

Capital paid in, . . . . .	. . . . .	\$525 00
Number of stockholders, . . . . .	. . . . .	15
Number of stockholders resident in Massachusetts, . . . . .	. . . . .	6
Amount of stock held in Massachusetts, . . . . .	. . . . .	\$210 00

EARNINGS AND EXPENSES.

Gross earnings, . . . . .	. . . . .	\$85 18
Expenses, . . . . .	. . . . .	58 83
Surplus, . . . . .	. . . . .	\$26 35

GENERAL BALANCE SHEET.

Assets.		
Property accounts, . . . . .	. . . . .	\$525 00
Cash on hand, . . . . .	. . . . .	26 35
Total debits, . . . . .	. . . . .	\$551 35

Liabilities.

Capital stock,	\$525 00
Balance, surplus,	26 35
Total credits,	\$551 35

STATISTICAL INFORMATION.

Number of subscribers,	15
Number of instruments,	15
Number of operators,	2
Number of pay stations,	2
Number of subscribers on party lines,	15
Overhead system:—	
Pole line, miles,	5
Iron wire, miles,	10

STATE LINE CO-OPERATIVE TELEPHONE COMPANY NO. 12.

Location of principal business office: State Line, Mass.

Date of organization: Dec. 6, 1902.

Date when company began to give service: March 1, 1903.

Service is given by this company over its own lines in the towns of Great Barrington and West Stockbridge.

GENERAL OFFICERS AND OFFICIAL TITLES.

Henry C. Kinne,	<i>President.</i>
John M. Vaber,	<i>Treasurer.</i>
Charles W. Roberts,	<i>Secretary.</i>

CAPITAL.

Capital paid in,	\$875 00
Number of stockholders,	18
Number of stockholders resident in Massachusetts,	18

EARNINGS AND EXPENSES (SIX MONTHS, JULY 1 TO DEC. 31, 1908).

Gross earnings:—

Exchange service,	\$99 00
Toll service,	1 00
Total gross earnings,	\$100 00
Expenses,	36 90

Net earnings,	\$63 10
Surplus balance from last year,	92 50

Surplus, Dec. 31, 1908, \$155 60

GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$1,033 28
Notes and accounts receivable,	4 75
Cash on hand,	10 50
Total debits,	\$1,048 53

Liabilities.

Capital stock,	\$875 00
Accounts payable,	17 93
Balance, surplus,	155 60
Total credits,	\$1,048 53

STATISTICAL INFORMATION.

NOTE.—This return covers the operation of the State Line Co-operative Telephone Company No. 12 from July 1, 1908, to Jan. 1, 1909, after which it was incorporated as Tagheonic Telephone Company, which shows return for period from Jan. 1, 1909, to June 30, 1909.

STATE LINE TELEPHONE COMPANY.

Location of principal business office: West Stockbridge, Mass.

Date when company began to give service: April, 1902.

Service is given by this company over its own lines in the town of West Stockbridge.

GENERAL OFFICER.

W. H. Losty, Owner.

CAPITAL.

Capital paid in. \$1,410 00

EARNINGS AND EXPENSES.

Gross earnings:—	
Exchange service,	. . . . . . . . . . \$50 97
Toll service,.	. . . . . . . . . . 29 55
Miscellaneous earnings,	. . . . . . . . . . 252 00

Total gross earnings, \$332 52
 Expenses, 128 96

Surplus for the year, \$203 56
Surplus balance from last year, 121 50

Miscellaneous charges to surplus, \$325 06
259 47

Surplus, June 30, 1909, \$65 59

GENERAL BALANCE SHEET.

Assets

Property accounts,	\$1,410 00
Cash on hand,	65 59
Total debits,	\$1,475 59
<i>Liabilities.</i>	
Capital stock,	\$1,410 00
Balance, surplus,	65 59
Total credits,	\$1,475 59

STATISTICAL INFORMATION.

NOTE.—“The so-called State Line Telephone Company is not an incorporated body, but is the name given by the New England Telephone Company in their directory to the exchange at West Stockbridge and State Line owned by W. H. Losty. He has made this report as near right as possible.”

TAGHCONIC TELEPHONE COMPANY.

Location of principal business office: State Line, Mass.

Date of organization: Dec. 31, 1907.

Date of incorporation: July 1, 1908.

State in which incorporated: Massachusetts.

Date of annual meeting: December 1.

Date when company began to give service: Jan. 1, 1909.

Service is given by this company over its own lines in the towns of Alford, Great Barrington and West Stockbridge.

GENERAL OFFICERS AND OFFICIAL TITLES.

Thomas L. Curren, *President.*
Edward Arthur Easland, *Secretary.*
Henry C. Kinne, *Treasurer.*

DIRECTORS AND RESIDENCES.

George H. Cobb, Jr., Housatonic, Mass.
Thomas L. Curren, West Stockbridge, Mass.
Henry C. Kinne, West Stockbridge, Mass.

CAPITAL

Capital paid in,	\$1,000 00
Number of stockholders,	21
Number of stockholders resident in Massachusetts,	21

EARNINGS AND EXPENSES (SIX MONTHS, JAN. 1 TO JULY 1, 1909).

Gross earnings:—

Exchange service,	.	.	.	.	.	.	.	\$123 00
Toll service,	.	.	.	.	.	.	.	1 00
								<hr/>
Total gross earnings,	.	.	.	.	.	.	.	\$124 00
Expenses,	.	.	.	.	.	.	.	51 87
								<hr/>
Net earnings,	.	.	.	.	.	.	.	\$72 13
Dividends,	.	.	.	.	.	.	.	30 00
								<hr/>
Surplus for the year,	.	.	.	.	.	.	.	\$42 13
Surplus balance from last year,	.	.	.	.	.	.	.	155 60
								<hr/>
Surplus, June 30, 1909,	.	.	.	.	.	.	.	\$197 73

GENERAL BALANCE SHEET.

Assets.

Property accounts,	.	.	.	.	.	.	.	\$1,188 88
Notes and accounts receivable,	.	.	.	.	.	.	.	5 25
Cash on hand,	.	.	.	.	.	.	.	30 28
								<hr/>
Total debits,	.	.	.	.	.	.	.	\$1,224 41

Liabilities.

Capital stock,	.	.	.	.	.	.	.	\$1,000 00
Accounts payable,	.	.	.	.	.	.	.	26 68
Balance, surplus,	.	.	.	.	.	.	.	197 73
								<hr/>
Total credits,	.	.	.	.	.	.	.	\$1,224 41

STATISTICAL INFORMATION.

Number of subscribers,	.	.	.	.	.	.	.	29
Number of instruments,	.	.	.	.	.	.	.	29
Number of operators,	.	.	.	.	.	.	.	1
Number of subscribers on party lines,	.	.	.	.	.	.	.	29
Overhead system:—								
Pole line, miles,	.	.	.	.	.	.	.	17
Iron wire, miles,	.	.	.	.	.	.	.	34

NOTE.—“Surplus balance from last year (\$155.60) was the old State Line Telephone Company balance when we took it over, January 1. Please note that the foregoing report covers only six months' business (January 1 to June 30).”

WEST STOCKBRIDGE MUTUAL TELEPHONE COMPANY.

Location of principal business office: West Stockbridge, Mass.

Date of organization: Feb. 20, 1904.

Date of incorporation: March 7, 1904.

State in which incorporated: Massachusetts.

Date of annual meeting: second Monday in May.

Date when company began to give service: May 1, 1904.

Service is given by this company over its own lines in the town of West Stockbridge.

GENERAL OFFICERS AND OFFICIAL TITLES.

Cyrus W. Sprague,	<i>President.</i>
William W. Bartlett,	<i>Secretary and Treasurer.</i>

DIRECTORS AND RESIDENCES.

Vallas R. Truesdell,	West Stockbridge, Mass.
Cyrus W. Sprague,	West Stockbridge, Mass.
Charles R. Van Buskirk,	West Stockbridge, Mass.
Charles H. Fuarey,	West Stockbridge, Mass.
Walter W. Curtis,	West Stockbridge, Mass.

CAPITAL.

Capital paid in,	\$1,000 00
Number of stockholders,	12
Number of stockholders resident in Massachusetts,	11
Amount of stock held in Massachusetts,	\$950 00

EARNINGS AND EXPENSES.

Gross earnings:—	
Exchange service,	\$379 94
Toll service,	10 50
	—————
Total gross earnings,	\$390 44
Expenses,	314 31
	—————
Net earnings,	\$76 13
Dividends,	130 00
	—————
Deficit for the year,	\$53 87

GENERAL BALANCE SHEET.

Assets.

Property accounts,	\$800 00
Notes and accounts receivable,	20 00
Supplies on hand,	10 00
Cash on hand,	106 20
Other assets,	150 00
	—————
Total debits,	\$1,086 20

Liabilities.

Capital stock,	\$1,000 00
Balance, surplus,	86 20
	—————
Total credits,	\$1,086 20

STATISTICAL INFORMATION.

Number of subscribers,	51
Number of instruments,	52
Number of operators,	2
Number of pay stations,	1
Number of subscribers on party lines,	51
Overhead system:—	
Pole line, miles,	5
Iron wire, miles,	10

NOTE.— "In our showing of dividends declared during year, would say that one dividend and also quite an item of expense account were paid from earnings of year ending June 30, 1908. The company year and the State year not being the same, the two accounts overlap which would account for the apparent overdraw on our earnings."

TELEGRAPH COMPANIES.

ATLANTIC TELEGRAPH COMPANY OF MASSACHUSETTS.

Location of principal business office: 53 Central Street, Lowell, Mass.

Date of organization: Dec. 22, 1885.

Date of incorporation: Nov. 12, 1884.

State in which incorporated: Massachusetts.

Date of annual meeting: first Wednesday after June 23.

Date when company began to give service: Aug. 15, 1907.

GENERAL OFFICERS AND OFFICIAL TITLES.

George M. Harrigan,	.	.	.	.	.	.	.	<i>President.</i>
John J. Hogan,	.	.	.	.	.	.	.	<i>Treasurer.</i>
Nathan D. Pratt,	.	.	.	.	.	.	.	<i>Clerk.</i>

DIRECTORS AND RESIDENCES.

John J. Hogan,	.	.	.	.	.	.	.	Lowell, Mass.
George M. Harrigan,	.	.	.	.	.	.	.	Lowell, Mass.
Nathan D. Pratt,	.	.	.	.	.	.	.	Lowell, Mass.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	.	.	\$5,000 00
Capital authorized by vote of company,	.	.	.	.	.	.	.	5,000 00
Capital paid in, 50 shares, par value \$100,	.	.	.	.	.	.	.	5,000 00

Whole number of stockholders,	.	.	.	.	.	.	.	3
Number of stockholders resident in Massachusetts,	.	.	.	.	.	.	.	3

NOTE.— "Company gives no service; its lines are leased to the Telepost Company of Massachusetts."

COMMERCIAL CABLE COMPANY.

Location of principal business office: 112 State Street, Boston, Mass.

Date of organization: March 14, 1906.

Date of incorporation: March 14, 1906.

State in which incorporated: Massachusetts.

Date of annual meeting: February 15.

Date when company began to give service: April 1, 1906.

Service is given by this company over its own lines in Boston and Rockport.

GENERAL OFFICERS AND OFFICIAL TITLES.

Clarence H. Mackay,	.	.	.	.	.	<i>President.</i>
George G. Ward,	.	.	.	.	.	<i>Vice-President.</i>
Edward C. Platt,	.	.	.	.	.	<i>Treasurer and Assistant Clerk</i>
Frederick H. Putt,	.	.	.	.	.	<i>Clerk.</i>

DIRECTORS AND RESIDENCES.

Clarence H. Mackay,	Roslyn, Long Island, N. Y.
George G. Ward,	New York, N. Y.
Frederick H. Putt,	Boston, Mass.

CAPITAL.

Capital authorized by charter,	\$10,000 00
Capital authorized by vote of company,	10,000 00
Capital paid in, 100 shares; par value, \$100,	10,000 00

Whole number of stockholders,	4
Number of stockholders resident in Massachusetts,	1
Amount of stock held in Massachusetts (shares),	1

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	\$44,923 18	
General expense,	\$2,228 92	
Operating expense,	35,160 15	
Current repair,	2,409 74	
Rented lines,	4,800 00	
Total expenses,	<hr/> 44,598 81	

Net revenue from operation,	\$324 37
Miscellaneous income: —	
Bank interest,	213 88
Surplus for the year ending June 30, 1909,	<hr/> \$538 25

EARNINGS.

Gross earnings from operation: —	
Cable service,	\$44,923 18
Miscellaneous income: —	
Bank interest,	213 88
Total gross earnings and income,	<hr/> \$45,137 06

EXPENSES.

General expense: —	
Postage, printing and stationery,	\$828 67
Miscellaneous office expenses,	940 88
Legal,	2 00
Insurance,	196 59
Taxes,	260 78
Total general expense,	<hr/> \$2,228 92
Operating: —	
Superintendence,	\$4,800 00
Wages of operators,	24,479 81
Wages of messengers,	1,202 95
Rent, light and heat,	4,358 56
Advertising and canvassing,	172 08
Incidentals (uniforms),	146 75
Total operating expense,	<hr/> 35,160 15
<i>Amount carried forward,</i>	<hr/> \$37,389 07

	Items.	Totals.
<i>Amount brought forward,</i>		<i>\$37,389 07</i>
Current repair:—		
Instruments and batteries (maintenance),	\$2,328 74	
Incidental,	81 00	
Total current repairs,	2,409 74	
Rented lines,	4,800 00	
		<i>\$44,598 81</i>

GENERAL BALANCE SHEET.

<i>Assets.</i>	
Real estate at Rockport,	\$4,200 75
Electrical apparatus, equipment, office furniture, etc.,	6,000 00
Total plant account,	\$10,200 75
Current assets:—	
Cash on hand,	\$9,201 53
Notes and accounts receivable,	9,380 81
Total current assets,	18,582 34
Total debits,	<i>\$28,783 09</i>
<i>Liabilities.</i>	
Capital stock, common,	\$10,000 00
Current liabilities:—	
Bills payable,	17,256 76
Total liabilities,	\$27,256 76
Balance, surplus,	1,526 33
Total credits,	<i>\$28,783 09</i>

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$988 08	
Gross earnings from operation,	44,923 18	
Miscellaneous income (bank interest),	213 88	
Operating expenses,	\$44,598 81	
Balance, surplus,	1,526 33	
	\$46,125 14	\$46,125 14

COMMERCIAL UNION TELEGRAPH COMPANY OF MASSACHUSETTS.

Location of principal business office: 84 State Street, Boston, Mass.

Date of organization: Aug. 3, 1888.

Date of incorporation: Aug. 3, 1888.

State in which incorporated: Massachusetts.

Date of annual meeting: fourth Saturday in July.

Service is given by this company over its own lines in the following cities and towns:—

Adams,	Lawrence,	North Adams,
Athol,	Lenox,	Orange,
Fitchburg,	Leominster,	Pittsfield,
Gardner,	Lowell,	Shelburne,
Greenfield,	Merrimac,	Williamstown.
Haverhill,	Newburyport,	

GENERAL OFFICERS AND OFFICIAL TITLES.

Charles A. Richardson,	.	.	.	.	.	.	<i>President.</i>
Charles P. Bruch,	.	.	.	.	.	.	<i>Vice-President.</i>
Theodore L. Cuyler, Jr.,	.	.	.	.	.	.	<i>Treasurer.</i>
I. R. Woodside,	.	.	.	.	.	.	<i>Clerk and Transfer Agent.</i>

DIRECTORS AND RESIDENCES.

Charles A. Richardson,	.	.	.	.	.	Boston, Mass.
Edward J. Nally,	.	.	.	.	.	New York, N. Y.
Charles P. Bruch,	.	.	.	.	.	New York, N. Y.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	\$10,000 00
Capital authorized by vote of company,	.	.	.	.	.	10,000 00
Capital paid in, 100 shares; par value, \$100,	.	.	.	.	.	10,000 00

Whole number of stockholders,	.	.	.	.	.	4
Number of stockholders resident in Massachusetts,	.	.	.	.	.	None.

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	.	\$4,265 01
General expense,	\$754 04	
Operating expense,	2,478 19	
Current repair,	1,124 88	
Total expenses,	<hr/> 4,357 11	
Deficit for year ending June 30, 1909,	\$92 10	

EARNINGS.

Gross earnings from operation,	\$4,265 01
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EXPENSES.

General expense:—						
Salaries of officers,	\$224 94
Postage, printing and stationery,	63 71
Miscellaneous office expenses,	.	.	.	.	.	17 18
Damages,	.	.	.	.	.	2 66
Rent of right of way,	.	.	.	.	.	168 53
Rent of land and buildings,	.	.	.	.	.	264 26
Insurance,	63
Taxes,	12 13
Total general expense,	<hr/> \$754 04

Amount carried forward,	\$754 04
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	Items.	Totals.
<i>Amount brought forward,</i>		\$754 04
Operating: —		
Wages of operators and others,	\$2,035 10	
Wages of messengers,	370 70	
Rent, light and heat,	35 54	
Incidental,	36 85	
Total operating expense,	2,478 19	
Current repair: —		
Repairs, overhead lines,	\$1,119 55	
Repairs call circuits,	5 33	
Total current repairs,	1,124 88	
Total of all operating expenses,	\$4,357 11	

GENERAL BALANCE SHEET.

Assets.	
Plant required for operation,	\$10,000 00
Current assets: —	
Cash on hand,	\$2,706 57
Notes and accounts receivable,	2,648 47
Supplies on hand,	221 52
Total current assets,	5,576 56
Balance, deficit,	733 84
Total debits,	\$16,310 40
Liabilities.	
Capital stock, common,	\$10,000 00
Current liabilities: —	
Accounts payable,	6,310 40
Total credits,	\$16,310 40

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Operating expenses,	\$4,357 11	
Gross earnings from operation,		\$4,265 01
Balance, deficit,		92 10
	\$4,357 11	\$4,357 11

THE MARTHAS VINEYARD TELEGRAPH COMPANY.

Location of principal business office: Woods Hole, Mass.

Date of organization: July 16, 1900.

Date of incorporation: July 20, 1900.

State in which incorporated: Massachusetts.

Date of annual meeting: January 18.

Date when company began to give service: Oct. 1, 1900.

Service is given by this company over its own lines in the following towns:—

Edgartown,
Falmouth,

Gosnold,
Nantucket,

Oak Bluffs,
Tisbury.

GENERAL OFFICERS AND OFFICIAL TITLES.

Henry G. Haddon, President and General Manager.
 Joseph H. Wentworth, Clerk and Treasurer.

DIRECTORS AND RESIDENCES.

Frederic E. Clary, New Haven, Conn.
 Arthur L. Edgecomb, Portland, Me.
 Henry G. Haddon, Woods Hole, Mass.

CAPITAL.

Capital authorized by charter,	\$10,000 00
Capital authorized by vote of company,	10,000 00
Capital paid in, 100 shares; par value, \$100,	10,000 00

Whole number of stockholders,	2
Number of stockholders resident in Massachusetts,	None.

DEBTS.

Bonds or notes issued, viz:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
Feb., 1909, .	Nov. 1909, .	—	5	\$2,000 00
March, 1909, .	Dec., 1909, .	—	5	2,000 00
Total amount of bonds and notes,				
\$4,000 00				
Capital paid in,				
10,000 00				
Total liability for capital and loans,				
\$14,000 00				

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,		\$8,965 08
Less rebates and discounts,		38 64
Revenue from operation,		\$8,926 44
General expense,	\$2,124 77	
Operating expense,	2,704 45	
Current repair,	1,501 23	
Reconstruction,	5,124 40	
Total expenses,	11,454 85	
Net deficit from operation,		\$2,528 41
Miscellaneous income:—		
Interest on deposits,		22 58
Deficit for year ending June 30, 1909,		\$2,505 83

EARNINGS.

Gross earnings from operation:—	Items.	Totals.
Telegraph service,	\$8,878 97	
Money transfers,	67 26	
Messenger service,	18 85	
	—————	—————
		\$8,965 08
Less rebates and discounts,		38 64
	—————	—————
Total gross earnings from operation,		\$8,926 44
Miscellaneous income:—		
Interest on deposits,		22 58
	—————	—————
Total gross earnings and income,		\$8,949 02

EXPENSES.

General expense:—		
Salaries of officers,	\$1,375 00	
Postage, printing and stationery,	158 36	
Miscellaneous office expenses,	141 53	
Travelling,	121 00	
Storeroom expenses,	20 00	
Rent of right of way,	25 00	
Rent of land and buildings,	96 00	
Insurance,	3 75	
Taxes,	184 13	
Total general expense,	—————	\$2,124 77
Operating:—		
Wages of operators,	\$3,066 23	
Wages of messengers,	269 59	
Telephone charges,	101 45	
Rent, light and heat,	222 57	
Advertising and canvassing,	100 00	
Incidental,	96 52	
	—————	—————
		\$3,856 36
Less expense for handling Western Union (\$781.71) and Postal Telegraph business (\$370.20),		1,151 91
Total operating expense,	—————	\$2,704 45
Current repair:—		
Repairs, overhead lines,	\$470 98	
Repairs, submarine lines,	908 28	
Repairs, instruments and batteries,	106 71	
Incidental,	15 26	
Total current repairs,	—————	1,501 23
Reconstruction items charged to expense:—		
Repairs, overhead lines,	\$494 58	
Repairs, submarine lines,	4,629 82	
Total of reconstruction items charged to expense,	—————	\$5,124 40
Total of all operating expenses,	—————	\$11,454 85

GENERAL BALANCE SHEET.

	Assets.	Items.	Totals.
Overhead lines,	\$4,000 00	
Submarine lines,	5,000 00	
Equipment,	668 50	
Office furniture and fixtures,	331 50	
Total plant account,	<hr/>	\$10,000 00
Current assets:—			
Cash on hand,	\$1,651 51	
Notes and accounts receivable,	1,972 93	
Total current assets,	<hr/>	3,624 44
Total assets,	<hr/>	\$13,624 44
Balance, deficit,	<hr/>	1,872 01
Total debits,	<hr/>	\$15,496 45

Liabilities.

Capital stock, common,	. . . . .	\$10,000 00
Current liabilities:—		
Loans and notes payable,	. . . . .	\$4,000 00
Audited vouchers and accounts,	. . . . .	1,241 24
Salaries and wages unpaid,	. . . . .	247 21
Rentals due and unpaid,	. . . . .	8 00
Total current liabilities,	. . . . .	<hr/>
		5,496 45
Total credits,	. . . . .	<hr/>
		\$15,496 45

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$1,133 82
Gross earnings from operation,	8,965 08
Miscellaneous income,	22 58
Operating expenses, including charges on account of reconstruction,	\$11,454 85
Rebates and discounts,	38 64
Depreciation of plant,	500 00
Balance, deficit,	<hr/>
	\$11,993 49	\$11,993 49

PROPERTY ACCOUNTS (ADDITIONS DURING THE YEAR).

Submarine lines,	\$500 00
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NEW ENGLAND TELEGRAPH COMPANY OF MASSACHUSETTS.

Location of principal business office: 84 State Street, Boston, Mass.

Date of organization: April 7, 1884.

Date of incorporation: April 7, 1884.

State in which incorporated: Massachusetts.

Date of annual meeting: second Tuesday in August.

Service is given by this company over its own lines in Attleborough, Brockton, Gloucester, Rockport and Salem.

GENERAL OFFICERS AND OFFICIAL TITLES.

Charles C. Adams,	.	.	.	.	.	.	<i>President.</i>
Charles P. Bruch,	.	.	.	.	.	.	<i>Vice-President.</i>
Theodore L. Cuyler, Jr.,	.	.	.	.	.	.	<i>Treasurer.</i>
L. A. Boone,	.	.	.	.	.	.	<i>Clerk and Transfer Agent.</i>

DIRECTORS AND RESIDENCES.

Charles C. Adams,	.	.	.	.	.	New York, N. Y.
Charles P. Bruch,	.	.	.	.	.	New York, N. Y.
Edward B. Pillsbury,	.	.	.	.	.	New York, N. Y.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	\$30,000 00
Capital authorized by vote of company,	.	.	.	.	.	30,000 00
Capital paid in, 300 shares; par value, \$100,	.	.	.	.	.	30,000 00
Whole number of stockholders,	.	.	.	.	.	1
Number of stockholders resident in Massachusetts,	.	.	.	.	.	None.

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	.	\$849 59
General expense,	\$179 52	
Operating expense,	471 22	
Current repair,	227 27	
Total expenses,	<u>878 01</u>	
Net deficit for year ending June 30, 1909,	.	\$28 42

EARNINGS.

Gross earnings from operation,	\$849 59
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EXPENSES.

General expense:—						
Salaries of officers,	\$83 99	
Postage, printing and stationery,	11 14	
Miscellaneous office expenses,	.	.	.	.	83	
Damages,	.	.	.	.	88	
Rent of right of way,	.	.	.	.	29 69	
Rent of land and buildings,	.	.	.	.	32 31	
Taxes,	.	.	.	.	20 68	
Total general expense,	.	.	.	.	<u>179 52</u>	
Operating:—						
Wages of operators and others,	.	.	.	.	\$444 99	
Wages of messengers,	.	.	.	.	21 10	
Rent, light and heat,	.	.	.	.	3 46	
Advertising and canvassing	.	.	.	.	60	
Incidental,	.	.	.	.	1 07	
Total operating expenses,	.	.	.	.	<u>471 22</u>	
Current repair:—						
Repairs, overhead and underground lines,	.	.	.	.	227 27	
Total of all operating expenses,	.	.	.	.	<u>\$878 01</u>	

GENERAL BALANCE SHEET.

<i>Assets.</i>	<i>Items.</i>	<i>Totals.</i>
Plant required for operation,		\$30,000 00
Current assets:—		
Cash on hand,	\$180 94	
Notes and accounts receivable,	447 52	
Supplies on hand,	2 59	
Total current assets,		631 05
Balance, deficit,		403 47
Total debits,		\$31,034 52
<i>Liabilities.</i>		
Capital stock, common,		\$30,000 00
Current liabilities:—		
Accounts payable,		1,034 52
Total credits,		\$31,034 52
PROFIT AND LOSS ACCOUNT.		
	Dr.	Cr.
Operating expenses,	\$878 01	
Gross earnings from operation,		\$849 59
Balance, deficit,		28 42
	<hr/> \$878 01	<hr/> \$878 01

OCEAN TELEGRAPH COMPANY.

Date of organization: June 28, 1869.

Date of incorporation: incorporated by chapter 129, Acts of 1869.

State in which incorporated: Massachusetts.

Date of annual meeting: whenever all stockholders shall in writing consent thereto.

GENERAL OFFICERS AND OFFICIAL TITLES.

Francis Peabody,	<i>President.</i>
Robert H. Gardiner,	<i>Treasurer.</i>
Alfred J. Mayo,	<i>Clerk.</i>

DIRECTORS AND RESIDENCES.

Francis Peabody,	Danvers, Mass.
Robert H. Gardiner,	Gardiner, Me.
Philip Dexter,	Boston, Mass.

CAPITAL.

Capital authorized by charter,	\$100,000 00
Capital authorized by vote of company,	25,000 00
Capital paid in, 250 shares; par value, \$100,	25,000 00

Whole number of stockholders,	4
Number of stockholders resident in Massachusetts,	3
Amount of stock held in Massachusetts (shares),	126

NOTE. — "The only property of the company is a parcel of land at Duxbury and a short piece of cable from thence to the sea."

This is not an operating company.

POSTAL TELEGRAPH-CABLE COMPANY OF MASSACHUSETTS.

Location of principal business office: 84 State Street, Boston, Mass.

Date of organization: April 3, 1896.

Date of incorporation: April 3, 1896.

State in which incorporated: Massachusetts.

Date of annual meeting: fourth Saturday in July.

Service is given by this company over its own lines in the following cities and towns:—

Amherst,	Falmouth,	Northampton,
Attleborough,	Foxborough,	Springfield,
Brookline,	Framingham,	Sturbridge,
Cambridge,	Holyoke,	Taunton,
Charlton,	Lynn,	Westfield,
Chelsea,	Malden,	Woburn,
Chicopee,	Manchester,	Worcester.
Danvers,	Natick,	
Fall River,	New Bedford,	

GENERAL OFFICERS AND OFFICIAL TITLES.

Arthur L. Edgecomb,	. . . . .	<i>President.</i>
Edward B. Pillsbury,.	. . . . .	<i>Vice-President.</i>
Theodore L. Cuyler, Jr.,	. . . . .	<i>Treasurer.</i>
Charles A. Richardson,	. . . . .	<i>Clerk and Transfer Agent.</i>

DIRECTORS AND RESIDENCES.

Edward J. Nally,	. . . . .	New York, N. Y.
Charles P. Bruch,	. . . . .	New York, N. Y.
Arthur L. Edgecomb,	. . . . .	Boston, Mass.

CAPITAL.

Capital authorized by charter,	. . . . .	\$5,000 00
Capital authorized by vote of company,	. . . . .	5,000 00
Capital paid in, 50 shares; par value, \$100,	. . . . .	5,000 00
Whole number of stockholders,	. . . . .	1
Number of stockholders resident in Massachusetts	. . . . .	None.

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,		\$24,874 17
General expense,	\$4,024 25	
Operating expense,	18,016 57	
Current repair,	2,683 30	
Total expenses,	<hr/> _____	24,724 12 <hr/>
Surplus for year ending June 30, 1909,	\$150 05

EARNINGS.

Gross earnings from operation,	\$24,874 17
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EXPENSES.

	Items.	Totals.
General expense:—		
Salaries of officers,	\$273 47	
Postage, printing and stationery,	430 92	
Miscellaneous office expenses,	207 70	
Damages,	22 48	
Legal,	73 17	
Rent of right of way,	111 74	
Rent of land and buildings,	2,733 57	
Insurance,	19 07	
Taxes,	152 13	
Total general expense,	<hr/>	\$4,024 25
Operating:—		
Wages of operators and others,	\$12,843 49	
Wages of messengers,	4,304 43	
Rent, light and heat,	483 41	
Advertising and canvassing,	1 55	
Incidental,	383 69	
Total operating expense,	<hr/>	18,016 57
Current repair:—		
Repairs overhead lines,	\$2,105 82	
Repairs underground lines,	295 03	
Repairs call circuits,	44 32	
Incidental,	238 13	
Total current repairs,	<hr/>	2,683 30
Total of all operating expenses,	<hr/>	\$24,724 12

GENERAL BALANCE SHEET.

Assets.	
Plant required for operation,	\$5,000 00
Current assets:—	
Cash on hand,	\$1,416 70
Notes and accounts receivable,	30,731 60
Supplies on hand,	541 75
Total current assets,	<hr/>
Total debits,	32,690 05
Liabilities.	
Capital stock, common,	\$5,000 00
Current liabilities:—	
Accounts payable,	30,840 27
Balance, surplus,	1,849 78
Total credits,	<hr/>
	\$37,690 05

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Gross earnings from operation,	\$24,874 17	
Operating expenses,	\$24,724 12	
Balance, surplus,	150 05	
	<hr/>	\$24,874 17
		\$24,874 17

UNITED TELEGRAM COMPANY.

Location of principal business office: 26 Congress Street, Boston, Mass.

Date of organization: June, 1890.

Date of incorporation: June 16, 1890.

State in which incorporated: New Jersey.

Date of annual meeting: first Wednesday in November.

Date when company began to give service: June, 1890.

Service is given by this company over its own lines in the city of Boston.

GENERAL OFFICERS AND OFFICIAL TITLES.

Charles F. Parker,	.	.	.	.	.	.	<i>President.</i>
L. Wallace Sweetser,	.	.	.	.	.	.	<i>Secretary and Treasurer.</i>
G. L. Ellwood,	.	.	.	.	.	.	<i>Assistant Treasurer.</i>
Walter L. Sanborn,	.	.	.	.	.	.	<i>Vice-President.</i>

DIRECTORS AND RESIDENCES.

Charles F. Parker,	.	.	.	.	.	.	Boston, Mass.
Stuart F. Martin,	.	.	.	.	.	.	Jamaica Plain, Mass.
L. Wallace Sweetser,	.	.	.	.	.	.	Wakefield, Mass.
Carl C. Lane,	.	.	.	.	.	.	Quincy, Mass.
Walter L. Sanborn,	.	.	.	.	.	.	Newton, Mass.
Walter E. Severance,	.	.	.	.	.	.	Dorchester, Mass.
Lewis C. Harris,	.	.	.	.	.	.	Newark, N. J.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	\$500,000 00
Capital authorized by vote of company,	.	.	.	.	.	50,000 00
Capital paid in, 10,000 shares; par value, \$5,	.	.	.	.	.	50,000 00

Whole number of stockholders,	.	.	.	.	.	79
Number of stockholders resident in Massachusetts,	.	.	.	.	.	33
Amount of stock held in Massachusetts (shares),	.	.	.	.	.	6,269

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
July 1, 1890,	July 1, 1920,	Income bonds,	5	\$200,000 00
Total amount of bonds and notes,	.	.	.	\$200,000 00
Capital paid in,	.	.	.	50,000 00
Total liability for capital and loans,	.	.	.	\$250,000 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR.

	Items.	Totals.
Gross earnings from operation,	.	\$46,083 26
General expense,	\$12,440 69	
Operating expense,	9,811 05	
<i>Amounts carried forward,</i>	\$22,251 74	\$46,083 26

	Items.	Totals.
<i>Amounts brought forward,</i>	\$22,251 74	\$46,083 26
Current repair,	3,600 00	
Rented lines,	15,500 04	
Total expenses,	41,351 78	
Net revenue from operation,		\$4,731 48
Miscellaneous income,		1,052 98
Surplus for year ending June 30, 1909,		\$5,784 46

EARNINGS.

Gross earnings from operation:—		
Stocks and markets,		\$46,083 26
Miscellaneous income,		1,052 98
Total gross earnings and income,		\$47,136 24

EXPENSES.

General expense:—		
Salaries of officers,		\$5,000 04
Wages of clerks,		3,156 00
Postage, printing and stationery,		1,506 91
Miscellaneous office expenses,		200 00
Storeroom expenses,		27 00
Rent of land and buildings,		1,586 00
Insurance,		60 00
Taxes,		300 94
General expense,		603 80
Total general expense,		\$12,440 69

Operating:—		
Superintendence,		\$1,800 00
Wages of operators,		5,002 32
Wages of others,		1,983 96
Wages of messengers,		12 00
Telephone charges,		89 76
Light and power,		569 09
Incidental,		353 92
Total operating expense,		9,811 05

Current repair:—		
Repairs overhead lines,		\$420 00
Repairs underground lines,		420 00
Repairs, instruments and batteries,		2,760 00
Total current repairs,		3,600 00
Rented lines,		15,500 04
Total of all operating expenses,		\$41,351 78

GENERAL BALANCE SHEET.

<i>Assets.</i>		
Equipment,		\$9,195 00
Tickers,		19,897 25
Franchise,		80,000 00
Ticker rights,		114,961 25
Total plant account,		\$224,053 50
<i>Amount carried forward,</i>		\$224,053 50

<i>Amount brought forward,</i>	.	.	.	.	.	.	\$224,053 50
Current assets:—							
Cash on hand,	.	.	.	.	.	.	6,383 96
Sinking and other special funds:—							
Funds in escrow,	.	.	.	.	.	.	25,000 00
Total debits,	.	.	.	.	.	.	\$255,437 46
<i>Liabilities.</i>							
Capital stock, common,	.	.	.	.	.	.	\$50,000 00
Bonded debt,	.	.	.	.	.	.	200,000 00
Current liabilities:—							
Dividends not called for,	.	.	.	.	.	.	537 50
Total liabilities,	.	.	.	.	.	.	\$250,537 50
Balance, surplus,	.	.	.	.	.	.	4,899 96
Total credits,	.	.	.	.	.	.	\$255,437 46

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	.	\$747 78
Gross earnings from operation,	.	46,083 26
Miscellaneous income,	.	1,052 98
Operating expenses,	.	\$41,351 78
Ticker rights,	.	1,632 28
Balance, surplus,	.	4,899 96
	<hr/>	<hr/>
	\$47,884 02	\$47,884 02

PROPERTY ACCOUNT (DEDUCTIONS DURING THE YEAR).

Ticker rights,	\$201,632 28
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NOTE.—By vote of the directors, on Dec. 14, 1908, the par value of all shares of stock issued and outstanding was decreased from \$25 per share to \$5 per share.

THE WESTERN UNION TELEGRAPH COMPANY.

Location of principal business office: 195 Broadway, New York, N. Y.

Date of organization: April 1, 1851.

Date of incorporation: April 1, 1851.

State in which incorporated: New York.

Date of annual meeting: second Wednesday in October.

Date when company began to give service: April, 1851.

GENERAL OFFICERS AND OFFICIAL TITLES.

Robert C. Clowry,	.	.	.	.	.	<i>President and General Manager.</i>
George J. Gould,	.	.	.	.	.	<i>Vice-President.</i>
J. B. Van Every,	.	.	.	.	.	<i>Vice-President.</i>
Thomas F. Clark,	.	.	.	.	.	<i>Vice-President.</i>
G. W. E. Atkins,	.	.	.	.	.	<i>Vice-President.</i>
J. C. Willever,	.	.	.	.	.	<i>Secretary.</i>
F. J. Scherrer,	.	.	.	.	.	<i>Assistant Secretary.</i>
A. R. Brewer,	.	.	.	.	.	<i>Treasurer.</i>
Lewis Dresdner,	.	.	.	.	.	<i>Assistant Treasurer.</i>
J. B. Van Every,	.	.	.	.	.	<i>Auditor.</i>
John F. Dillon,	.	.	.	.	.	<i>General Counsel.</i>
G. H. Fearons,	.	.	.	.	.	<i>General Attorney.</i>
Rush Taggart,	.	.	.	.	.	<i>Solicitor.</i>
H. D. Estabrook,	.	.	.	.	.	<i>Solicitor.</i>
B. Brooks,	.	.	.	.	.	<i>General Superintendent, Eastern Division, New York, N.Y.</i>
C. F. Ames,	.	.	.	.	.	<i>District Superintendent, Boston, Mass.</i>

DIRECTORS.

Thomas T. Eckert, *Chairman.*
 Robert C. Clowry,
 John T. Terry,
 George J. Gould,
 Edwin Gould,
 Frank J. Gould,
 Jacob H. Schiff,
 William L. Bull,
 Joseph J. Sloeum,
 Thomas H. Hubbard,
 James H. Hyde,
 J. Pierpont Morgan,
 Charles Lanier,
 Chauncey M. Depew,
 Henry M. Flagler,

John Jacob Astor,
 Oliver Ames,
 C. Sidney Shepard,
 John B. Van Every,
 James Stillman,
 Thomas F. Clark,
 Howard Gould,
 John J. Mitchell,
 Henry A. Bishop,
 Harris C. Fahnestock,
 Henry Walters,
 G. W. E. Atkins,
 Paul Morton,
 Robert M. Gallaway.

CAPITAL.

Capital authorized by charter,	.	.	.	.	.	\$100,000,000 00
Capital authorized by vote of company,	.	.	.	.	.	125,000,000 00
Capital paid in, 998,171 shares; par value, \$100,	.	.	.	.	.	99,817,100 00

Whole number of stockholders, 13,353

DEBTS.

Bonds or notes issued, viz.:—

DATE.	When due.	How secured.	Rate of Interest (Per Cent.).	Amount.
Sundry dates since 1900, .	May 1, 1950,	Funding and real estate mortgage.	4½	\$20,000,000 00
Sundry dates since 1887, .	Jan. 1, 1938,	Collateral trust,	5	8,645,000 00
Sundry dates since 1906, .	Nov. 1, 1936,	Stocks of other companies, etc.,	4	10,000,000 00
Total amount of bonds and notes, .	.	.	.	\$38,645,000 00
Capital paid in, . . . . .	.	.	.	99,817,100 00
Total liability for capital and loans, .	.	.	.	\$138,462,100 00

CONDENSED STATEMENT OF OPERATING FOR THE YEAR (WHOLE SYSTEM).

	Items.	Totals.
Gross earnings from operation, ¹ including income from securities,	\$30,541,072 55	
General expense, operating expense and taxes,	\$18,211,475 90	
Current repair and reconstruction,	3,124,093 11	
Rented lines,	1,542,520 24	
Equipment of offices and wires,	315,876 41	
Total expenses,	<u>23,193,965 66</u>	
Total income above expense,	\$7,347,106 89	
Fixed charges:—		
Interest on funded debt,	<u>1,732,250 00</u>	
Surplus of net income above fixed charges,	\$5,614,856 89	
Dividends declared,	<u>2,739,435 50</u>	
Surplus for year ending June 30, 1909,	<u>\$2,875,421 39</u>	

EARNINGS (WHOLE SYSTEM).

Gross earnings from operation:—		
Traffic receipts,	\$24,536,727 98	
Stocks and markets,	1,480,155 68	
Money transfer tolls,	226,086 64	
Leased wires,	2,552,682 82	
Total gross earnings from operation,	<u>\$28,795,653 12</u>	
Miscellaneous income,	<u>1,745,419 43</u>	
Total gross earnings and income,	<u>\$30,541,072 55</u>	

EXPENSES (WHOLE SYSTEM).

Operating:—		
Wages of operators and salaries and wages of others,	\$9,893,907 77	
Superintendence,	291,421 49	
Wages of messengers,	2,100,611 30	
Telephone charges and commissions,	97,901 25	
Rent, light and heat,	1,150,885 20	
Incidental and other expenses,	4,461,885 72	
Total operating expense,	<u>\$17,996,612 73</u>	
Current repair to lines,	\$1,983,338 57	
Incidental and reconstruction,	1,140,754 54	
Cable repairs,	214,863 17	
Total current repairs,	<u>3,338,956 28</u>	
Rents and royalties on commercial news,	1,542,520 24	
Office repairs,	\$132,284 01	
Instruments, etc.,	183,592 40	
	<u>315,876 41</u>	
Total of all operating expenses,	<u>\$23,193,965 66</u>	

¹ Gross earnings in Massachusetts, \$79,234.76.

GENERAL BALANCE SHEET.

Assets.

Telegraph lines, stocks owned of leased telegraph companies that are merged in Western Union Company's system, franchises, patents, etc.,	\$124,086,920 48
Stocks and bonds of leased telegraph companies received in exchange for collateral trust bonds,	8,645,000 00
Stocks of not leased telegraph companies, and other securities,	17,798,672 36
Real estate,	5,088,359 18
Supplies and material in supply departments,	1,243,471 90
Sundry accounts receivable, etc.,	2,295,537 13
Cash in treasury and in hands of agents (since remitted to treasury),	3,158,903 07
 Total debits,	 \$162,316,864 12

Liabilities.

Capital stock,	\$99,817,100 00
Funded debt,	38,645,000 00
Gold and Stock Telegraph Company for stocks of other companies held through lease of that company until 1981,	1,946,592 00
Sundry accounts payable, etc. (including dividend July 15, 1909),	3,040,710 26
Surplus of income prior to Oct. 1, 1881, appropriated for construction and acquisition of telegraph lines and property (in excess of the \$15,526,590 capital stock distributed in 1881 on account of such appropriations of income during the fifteen years preceding),	1,598,184 03
Surplus of income subsequent to Oct. 1, 1881 (\$16,639,517.92), plus the proportion of surplus of income prior to Oct. 1, 1881 (\$629,759.91), that was not appropriated as above,	17,269,277 83
 Total credits,	 \$162,316,864 12

PROFIT AND LOSS ACCOUNT.

	Dr.	Cr.
Balance from previous year,	\$14,393,856 44	
Revenues,		30,541,072 55
Expenses,	\$23,193,965 66	
Interest on bonds,	1,732,250 00	
Appropriated for dividends,	2,739,435 50	
Balance, surplus,	17,269,277 83	
 	 \$44,934,928 99	 \$44,934,928 99

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